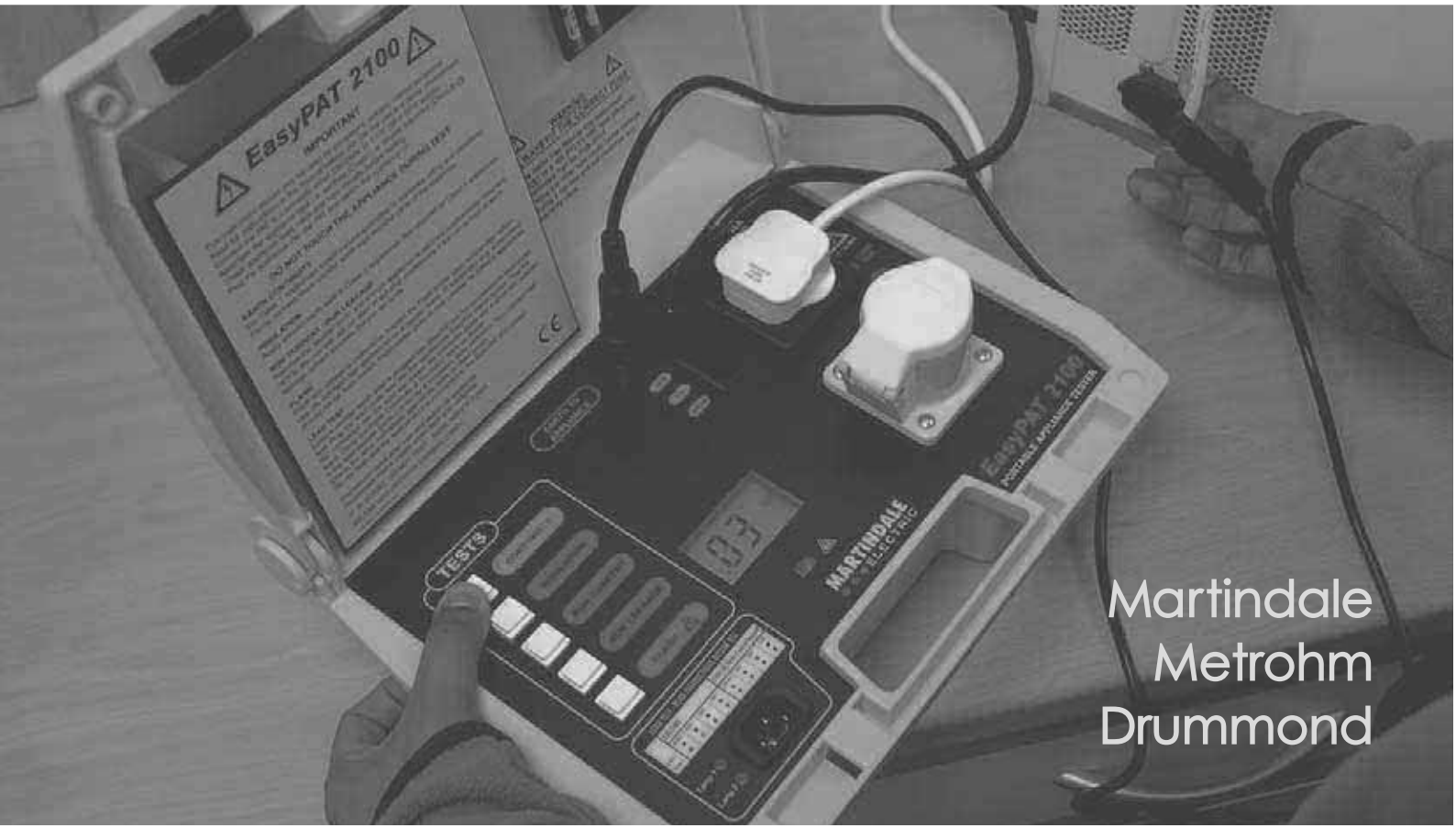
Test Equipment Catalogue 2007

MARTINDALE ELECTRIC

Trusted by professionals



Martindale
Metrohm
Drummond

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WARNING!

Test equipment is designed for use only by competent persons with appropriate qualifications and experience.

Where potentially dangerous voltages, currents or other hazards might be present, the performance of the equipment should be confirmed using a proving unit or other appropriate precautions.

This catalogue is priced in pounds sterling and special terms apply to Drummond, Metrohm and "other" products.

- ● features in our Best Sellers brochure
- ◆ special terms apply

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full user manuals and specs available at www.martindale-electric.co.uk

Introduction

MARTINDALE ELECTRIC

Trusted by professionals

ISO 9000 REGISTERED FIRM — UKAS QUALITY MANAGEMENT 018

Quality System registered to ISO 9001: 2000

GAMBICA

Martindale is a member of Gambica, the UK's representative body for test equipment.

Due to a policy of continuous development, Martindale Electric Company Limited reserves the right to alter the equipment specification, description and prices outlined in this publication without prior notice and no part of this publication shall be deemed to be part of any contract for the equipment unless specifically referred to as an inclusion within such contract.

All prices in this catalogue exclude VAT. E. & O.E

Martindale manufactures a wide range of electrical test equipment.

The innovative Fuse Finder takes away the hassle of needing two people to perform a one man job, thus saving time and preventing costly mistakes when identifying which fuse or breaker to pull.

Martindale products such as the IN2103, the fuse finder and the E-Ze Check™ have won awards and commendations and have been specified by many organisations.

Martindale products comply with the following and other relevant standards: GS38, IEC 61010, BS EN 61010, BS EN 61557, BS 7671.

Why not call us for a chat on 01923 441717 and see how we can help you work faster, more safely and more efficiently.

Please check our website for updated manuals, new products, application notes and a wealth of information on safety and electrical testing.

www.martindale-electric.co.uk

16th Edition and Part P testing

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VR2230

Insulation Ranges:
0.05MΩ to 1999MΩ at voltages between 50VDC, 100VDC, 250VDC, 500VDC, 1000VDC
with a resolution of 0.01MΩ, 0.1MΩ and 1MΩ

Continuity Ranges:
0.01Ω-19.99Ω (0.01Ω res)
20.0Ω-99.9Ω (0.1Ω res)

Earth Loop Ranges: 25A
0.03Ω-19.99Ω (0.01Ω res),
20.0Ω-199.9Ω (0.1Ω res),
200Ω-1999Ω (1Ω res)

Non Trip Earth Loop at 1Ω Res:
1-1999Ω

RCD Ranges:
10mA, 30mA, 100mA, 300mA, 500mA

Phase Rotation Test: Graphic display of phase sequence

Display Features: LCD custom

Working Temperatures:
-10°C to + 50°C

Live Circuit Warning: yes

Insulation: Class 2, double insulation

Low Battery Indication: yes

Complies With: EN 61010-1 + A2 (1997), EN 61557, EN 61326-1 (1997) + A1 (1998).

Overvoltage: CAT III 460V~ P-N-E/ 265V~ to earth

Supply: battery 6 x 1.5V LR6-AA-AM3-MN1500

Dimensions: 222 x 162 x 57mm

Weight: 1000gm approx (incl batteries)

Includes: soft case, manual and test leads (TL206 & TL54)

VR2240

The VR2240 adds:

Ramp test for RCDs

Memory Slots For Saved Tests: 350

Interface: Optical RS232 to print or to download the tests

"all in one performance – great value for money"

All-in-one tester

The first in a series of three testers, the VR2230 is an ideal Part P tester.

- Continuity test with test lead null feature & timer facility
- Manual, auto and timed insulation tests at voltages of 250V, 500V & 1000V
- Manual and automatic RCD testing of general, time delayed and DC sensitive RCDs at x1/2, x1, x2 & x5
- P-P, P-N & P-PE loop test with PSC
- Non-trip P-PE Earth loop test with PSC
- Phase rotation test
- Auto power off
- Part P compliant

It is smaller & more compact than other comparable instruments on the market, which makes it very comfortable to use in confined areas. It can also be held comfortably in one hand. Supplied in a soft carry case.

The Veritests are supplied complete with test leads & "quickstart" user guide, as well as a comprehensive user manual.

MARVR2230	all-in-one tester	£629.00
TC2D	calibration	£72.00

All-in-one tester

This all-in-one tester incorporates continuity, insulation resistance, RCD, earth loop impedance, earth resistance and phase rotation tests.

The Veritest also has the ability to commit test results to its internal memory and is equipped to download to a P.C. via optional software and accessories.

Up to 350 different test results can be stored and up to 99 locations. Results are illustrated below.

Martindale Electric VR2240 Test Report — Site: 187 Buckingham Road, Watford, Herts

P	Circuit / Location / Test Type	M	VR2240 Settings	Dowr.
01	Downstairs Ring PE Continuity - 23/05/06	001	Continuity AUTO	R: 3.36Ohm
02	Downstairs Ring P Continuity - 23/05/06	002	Continuity AUTO	R: 3.41Ohm
03	Downstairs Ring N Continuity - 23/05/06	003	Continuity AUTO	R: 3.28Ohm
04	Downstairs Ring Insulation P-N - 23/05/06	004	Insulation 500V MAN	R: >0999MOhm
05	Downstairs Ring P-PE - 23/05/06	005	Insulation 500V AUTO	R: 11.08MOhm
	Downstairs Ring PE-N - 23/05/06		Insulation 500V AUTO	R: 187.1MOhm

MARVR2240SC	all-in-one tester	£840.00
TC2D	calibration	£72.00
MARVRSOFT1	downloading software for VR2240	£79.00
MARVRTL1	infrared data lead	£38.50
MARTL206	replacement mains lead	£16.75
MARVRTL54	replacement fused lead set	£53.90
MARTC66	hard carry case	£29.00

All-in-one tester

Main Features Include:

- Continuity test
- Insulation resistance test
- Non Trip Earth Loop test
- RCD test
- Phase Rotation test
- Power Analyser
- Earth Soil Resistivity
- 999 memory Slots
- Downloadable to PC
- Backlight
- Auto Power off
- Carry case

This is our flagship multi-tasking all in one 16th edition tester. Incorporating all of the functions of the VERITEST 2240, with the added functionality of a power analyser and earth resistivity and environmental tests.

This is a fully specified instrument that not only offers powerful testing capabilities to the electrician, but also is an invaluable tool for power, distribution, environmental and cabling organisations alike.

While power analysis use dto be a specialist function of high end equipment, energy analysis and cost saving are now day to day concerns and every electrician needs to do simple power consumption estimates and simple meter accuracy checks.

Check for availability

MARVR2250	all-in-one tester	£1147.00
MARVRSOFT2	downloading software	
Optional Accessories:		
MARVERHP30C2	clamp AC 200-2000A/1V (bar:100x46mm) - cable 2m	
MARVERHP30C3	clamp AC 3000A/1V (bar:100x46mm) - cable 2m	

VR2250

Insulation Ranges:
50VDC, 100VDC, 250VDC, 500VDC, 1000VDC

Continuity Ranges:
0.01Ω-9.99Ω (0.01Ω res)
10.0Ω-99.9Ω (0.1Ω res)

RCD Ranges:
10mA, 30mA, 100mA, 300mA, 500mA.

Earth Loop Ranges: 25A
0.03Ω-19.99Ω (0.01Ω res),
20.0Ω-199.9Ω (0.1Ω res),
200Ω-1999Ω (1Ω res)

Non Trip Earth Loop at 1Ω Res:
1-1999Ω

Earth Ground Resistance (with separately available rods):
0.01Ω-19.99Ω (0.01Ω res),
20.0Ω-199.9Ω (0.01Ω res),
200Ω-1999Ω (1Ω res)

Analyser functions:

Active power:
0-99.99 (W, KW) MW

Reactive power:
0-9999 (VAR, kVAR) MVAR

Apparent power:
0-9999 (VA, kVA) MVA

Active energy:
0-9999 (Wh) MWh

Reactive energy:
0-9999 (VARh) MVARh

Memory Slots For Saved Tests:
999

Phase Rotation Test:
Yes

Backlight:
Yes

Working Temperatures:
-10 C to + 50 C

Live Circuit Warning:
Yes

Insulation: Class 2, double insulation

Overvoltage: CAT III 460V~ P-N-E/ 265V~ to earth

Complies With: EN 61010-1 + A2 (1997), EN61557, EN61326-1 (1997) + A1 (1998)

Dimensions:
225 x 165 x 105mm

Weight: 1200gm approx (incl batteries)

"even incorporates power analysis"

Insulation Tester Comparison Chart

A choice of 7 insulation testers from low cost, value-for-money, to cutting-edge technology.

Key choices are:

- Analogue or digital?
- 500V only or 250 and 1000V as well?
- Do you need to monitor the test voltage to ensure it's really at least 500V?
- Do you need to store test results for later recall?
- Do you need Polarisation Index (PI) or Dielectric Absorption Ratio (DAR) for more accurate measurement?

	500V	250 / 500 / 1000V	Test Voltage Measurement	Analogue	Digital	PI & DAR	Maximum Range	Pass / Fail Indication	User Settable Limits	Memory	Price
IN1001	✓			✓			100MΩ				£248.50
IN1003		✓		✓			200MΩ				£295.00
IN2001	✓				✓		199.9MΩ				£248.50
IN2003		✓			✓		199.9MΩ				£275.00
IN2101	✓				✓		4000MΩ				£219.00
IN2102		✓	✓		✓		5000MΩ	✓			£249.00
IN2103		✓	✓		✓	✓	5000MΩ	✓	✓	✓	£328.70
VR2230	✓				✓		1999MΩ				£629.00
VR2240	✓	✓			✓		1999MΩ		✓	✓	£840.00
VR2250	✓	✓			✓		1999MΩ		✓	✓	£1147.00

Unfused and fused leads fit all Martindale Insulation Testers

TL57 - Fused leads with GS38 compliant probes

Recommended for use on mains circuits

TL47 - Unfused leads with GS38 compliant probes

MARTL47	unfused test leads	£19.95
MARTL57	fused test leads	£32.40

500V Low Cost Insulation Tester

The new 16th Edition (BS EN 61557) testers from Martindale give high quality, accurate testing at low costs. These meters comply fully with all UK and international standards.

All units have a large backlit digital display with analogue bargraph.

The 2101 insulation tester is amazing value for money.

Features include buzzer, backlight, auto hold

The output test voltage is automatically displayed during testing. This guarantees a minimum test voltage of 500V is really being applied during the test.

Automatic zero adjust removes the resistance of the leads, and the test button can be set to be either latching, to give a permanent output, or 'press to test'.

MARIN2101	insulation tester	£219.00	●
TC2A	calibration	£27.00	◆
MARTL57	optional fused test leads	£32.40	

IN2101

Insulation: 0.200MΩ - 4,000MΩ at 500V in 4 ranges, with automatic discharge

Accuracy: ± (3% rdgs + 5 digits)

Continuity: 0.1Ω - 40Ω, 0.01Ω resolution and short circuit current > 200mA (buzz <30Ω)

Accuracy: ± (3% rdgs + 5 digits)

Resistance: 0.1Ω -1999kΩ (buzz< 30Ω)

Accuracy: ± (3% rdgs + 5 digits)

Voltage range: 600V AC/DC, warning for voltage presence >30V

Accuracy: ± (3% rdgs + 5 digits)

Backlight, Auto Hold, Auto Zero

Protection: IP44

Overvoltage: 600V CAT III

Complies with: BS EN 61557 & BS 7671 (16th Edition)

Dimensions: 90 x 210 x 54mm

Includes: batteries, manual, carry case & test leads (TL47)

Insulation Tester

The IN2102 adds 250V and 1000V ranges to the IN2101. This makes the IN2102 a fully specified conventional insulation tester with the added benefit of displaying the test voltage.

As with all models in the range, the casing is made from tough ABS offering high levels of durability whilst maintaining user comfort with its unique stylish design, making it ideal for one-handed operation.

The large display is clear, easy to read and incorporates digital and analogue indicators to meet all user preferences.

MARIN2102	insulation tester	£249.00	●
TC2A	calibration	£27.00	◆
MARTL57	optional fused test leads	£32.40	

IN2102

Insulation Tests:
250V: 4/40/400/1000MΩ
500V: 4/40/400/4000MΩ
1000V: 4/40/400/5000MΩ
Range: 0.200MΩ to 5000MΩ
Short Circuit Current: <1.5mA
Accuracy: ± (3% rdgs + 5 digits)
Auto-Discharge: Yes
Buzzer disable option: Yes

Continuity:
Range: 0.01Ω to 40.00Ω
Resolution: 0.01Ω
Short Circuit Current: >200mA
Accuracy: ± (3% rdgs + 5 digits)
Auto-Discharge: Yes

Resistance: 0.1Ω - 1, 999kΩ
Open Voltage: 3V
Accuracy: ± (3% rdgs + 5 digits)

Voltage Range: 600V AC/DC,
Voltage Warning Indicator: >30V
Accuracy: ± (3% rdgs + 5 digits)

Backlight, Autohold, Auto Zero
APO disable option

Protection: IP44
Overvoltage: 600V CAT III
Complies with: BS EN 61010, BS EN 61557 & BS 7671: 2001
Dimensions: 90 x 210 x 54mm

Includes: batteries, manual, carry case & test leads (TL47)

IN2103

Insulation Tests:
250V: 4/40/400/1000MΩ
500V: 4/40/400/4000MΩ
1000V: 4/40/400/5000MΩ
Range: 0.200MΩ to 5000MΩ
Short Circuit Current: <1.5mA
Accuracy: ± (3% rdgs + 5 digits)
Auto-Discharge: Yes
Buzzer disable option: Yes

Continuity:
Range: 0.01Ω to 40.00Ω
Resolution: 0.01Ω
Short Circuit Current: >200mA
Accuracy: ± (3% rdgs + 5 digits)
Auto-Discharge: Yes

Buzzer: <30Ω

Resistance:
Range: 0.1Ω - 1999kΩ
Open Voltage: 3V
Accuracy: ± (3% rdgs + 5 digits)

Voltage Test:
Voltage Range: 600V AC/DC,
Voltage Warning Indicator: >30V
Accuracy: ± (3% rdgs + 5 digits)

Digital Display: 4000 count

Analogue Bargraph: 51 segment

Batteries: 6 x 1.5V AA Alkaline

User settable Limits, Pass/Fail Indicators, Polarisation Index, Dielectric Absorption Ratio, APO disable option, Memory, Backlight, Autohold, Auto Zero

Protection: IP44

Overvoltage: 600V CAT III

Complies with: BS EN 61010, BS EN 61557 & BS 7671:2001 (16th Edition)

Optional fused test leads: TL57
Replacement test leads: TL47

Dimensions: 90 x 210 x 54mm

Includes: batteries, manual, carry case & test leads (TL47)

"awesome specification for a hand held"

Professional Insulation Tester

The top of the range IN2103 insulation and continuity tester offers 250, 500 and 1000V tests. As with all models in this range, a large clear backlit digital display and analogue bargraph shows the test voltage as well as the insulation reading.

In addition to all the features of the IN2101 and IN2102, the IN2103 has user settable limits with PASS/FAIL indication and a memory to store and compare readings.

This advanced tester also includes both Polarisation Index (PI) and Dielectric Absorption Ratio (DAR) measurements. These sophisticated tests, introduced for the first time in a handheld instrument, allow for more accurate measurement of insulation values.

This range also incorporate an internal battery check facility, which indicates the energy levels as both a percentage and a voltage.

They also fully comply with the Part P building regulations inspection and testing requirements, as well as all the relevant standards.

MARIN2103	insulation tester	£328.70
TC2A	calibration	£27.00
MARTL57	optional fused test leads	£32.40

500V Analogue Insulation Tester

This analogue insulation and continuity tester is designed to carry out testing in accordance with national and international standards.

It has a 'push to operate' and 'turn to latch' test button on the insulation ranges as standard.

This instrument will indicate the presence of voltage if connected to a live supply.

It would be suitable for users who prefer the simplicity of analogue indication.

Single range tester

This supercedes the Metrohm 16A500 and is widely specified by utilities and major contractors

MARIN1001	insulation tester	£248.50
TC2A	calibration	£27.00
MARTL57	optional fused test leads	£32.40

IN1001

Insulation Test: 500V
Insulation range: 0-100MΩ (500V)

Voltage V~
Range: 0-500V AC
Accuracy: ±3% of full scale
Input Impedance: 250KΩ nominal

Continuity (Ω)
Range: 0-2Ω
Test Voltage: 4V DC min
Short Circuit Current: 200mA min
Accuracy: ±1.6mm of scale arc

Buzzer
Range: operates below 1Ω
On all ranges:
buzzer operates after 4 min if tester is switched on
Current Consumption: 240mA nominal

Resistance
Range: 0-200Ω
Test Voltage: 4V DC min
Short Circuit Current: 20mA min
Accuracy: ±1.6mm of scale arc

Complies with: BS EN 61557 & BS 7671

Housing: polycarbonate/ABS
Dimensions: 190 x 90 x 54mm
Weight: 0.5kg approx

Includes: batteries, manual, carry case & test leads (TL47)

250V/500V/1000V Analogue Insulation Tester

In addition to the above, this instrument measures at 3 voltages - 250V, 500V and 1000V.

It would be suitable for users who prefer the simplicity of analogue indication while retaining the accuracy required for Part P, BS7671 and 16th Edition testing.

Three range tester

This supercedes the Metrohm 16A251

MARIN1003	insulation tester	£295.00
TC2A	calibration	£27.00
MARTL57	optional fused test leads	£32.40

IN1003

Insulation Test: 250/500/1000V

Insulation range:
0-50MΩ (250V)
0-100MΩ (500V)
0-200MΩ (1000V)

Voltage V~
Range: 0-500V AC
Accuracy: ±3% of full scale
Input Impedance: 250KΩ nominal

Continuity (Ω)
Range: 0-2Ω
Test Voltage: 4V DC min
Short Circuit Current: 200mA min
Accuracy: ±1.6mm of scale arc

Buzzer
Range: operates below 1Ω
On all ranges: buzzer operates after 4 min if tester is switched on.
Current Consumption: 240mA nominal
Resistance: 0-200Ω
Test Voltage: 4V DC min
Short Circuit Current: 20mA min
Accuracy: ±1.6mm of scale arc

Housing: polycarbonate/ABS

Dimensions: 190 x 90 x 54mm

Weight: 0.5kg approx

Includes: batteries, manual, carry case & test leads (TL47)

IN2001

Insulation: 10kΩ to 100MΩ at 500V

Continuity:
0 - 20Ω, 0.01Ω resolution
0 - 200Ω, 0.1Ω resolution
(audible tone <1Ω)

Voltage range: 500V AC

Accuracy:
± 2% of reading ± 1 Digit to 20MΩ
± 3% of reading ± 1 Digit to 100MΩ
± 10% of reading ± 1 Digit to 200MΩ

Complies with: BS EN 61557, BS 7671, HD 384 and 16th Edition

Housing: polycarbonate/ABS

Dimensions: 190 x 90 x 54mm

Weight: 0.5kg approx

Includes: quality soft protective carry case, test leads (TL47), batteries & manual

"simple insulation and continuity testing that meets the regs"

Insulation Tester

The IN2001 has a stable 500V test voltage and a 200mA continuity test and fully meets all relevant regulations.

It has a 'push to operate' and 'turn to latch' test button on the insulation ranges as standard.

This instrument will indicate the presence of voltage if connected to a live supply.

With an automatic zero adjust feature to remove the resistance of the leads, this unit guarantees fast, accurate continuity testing.

IN 2000 series tester are widely specified in utilities and other large users due to their reliability and simplicity of use.

This supercedes the Metrohm 16D500

MARIN2001	insulation tester	£248.50
TC2A	calibration	£27.00
MARTL57	optional fused test leads	£32.40

IN2003

Insulation:
10kΩ to 50MΩ at 250V
10kΩ to 100MΩ at 500V
10kΩ to 200MΩ at 1000V

Continuity:
0 - 20Ω, 0.01Ω resolution
0 - 200Ω, 0.1Ω resolution
(audible tone <1Ω)

Voltage range: 500V AC

Accuracy:
± 2% of reading ± 1 Digit up to 20MΩ
± 3% of reading ±1 Digit up to 100MΩ
± 10% of reading ± 1 Digit up to 200MΩ

Complies with: BS EN 61557 and 16th Edition

Housing: polycarbonate/ABS

Dimensions: 190 x 90 x 54mm

Weight: 0.5kg approx

Includes: quality soft protective carry case, test leads (TL47), battery & manual

Insulation Tester

This top of the range insulation and continuity tester offers 250, 500 & 1000V tests in addition to all the features of the IN2001 above.

This supercedes the Metrohm 16D251

MARIN2003	insulation tester	£275.00
TC2A	calibration	£27.00
MARTL57	optional fused test leads	£32.40

RCD Tester - Residual Current Device Tester

This supercedes the Metrohm 16R240A

The RCD tester is fast and easy to use and suitable for testing all common RCDs up to 500mA.

The RCD rating (IΔN) is set using the convenient centrally located rotary switch. Three different currents (full, half and fast test) are available on one selector switch, and 0° or 180° (positive/negative half cycle) can be set on the second selector switch.

The 6mA range gives this unit wider application than many rivals.

MARRC2000	rcd tester	£294.50 ●
TC2A	calibration	£27.00 ◆
MARTL88	optional 3 way test leads	£34.75

RC2000

Supply Voltage: 240 Volts AC, 50/60Hz

RCD Ratings (IΔN): 6 mA, 10mA, 30mA, 100mA, 300mA and 500mA

Half trip settings (½xIΔN): 3mA, 5mA, 15mA, 50mA, 150mA and 250mA

Fast trip settings: 150mA (for IΔN=6, 10 and 30mA only)

Accuracy: ± 3% at 240V AC Supply Voltage
Rising Linearly To ±9% at ± 6% of 240V Supply Voltage

Test polarity: 0° and 180°

Timing range: 0 - 1999mSec (resolution of 1mSec)

Timing accuracy: ±2% of reading ±1 digit

Housing: ABS

Dimensions: 190 x 90 x 54mm

Weight: 350gms approx

Includes: quality soft protective carry case, batteries, mains test lead (TL205) & manual

Loop Tester

This is a fast and accurate autoranging loop tester.

It can carry out phase earth and phase neutral testing and it automatically displays PSCC readings. A wander lead for testing bonded metalwork is also supplied (TL61).

See pages 14 and 15 for 16th Edition Kits.

This supercedes the Metrohm 16L240P

MARLP2000	loop tester	£275.00
TC2A	calibration	£27.00 ◆
MARTL85	optional 2 way test leads	£34.75
MARTL88	optional 3 way test leads	£34.75
MARTL205	replacement mains lead	£10.00

LP2000

Supply Voltage: 200 to 260V rms, 50/60Hz

Test Current: 24A, rms, for two half cycles at 240V

Loop Range:
0 to 15Ω nominal in steps of 0.01Ω
15 to 199.9Ω in steps of 0.1Ω

Accuracy: ±2% of reading, ±2 digit
Temperature Coefficient: ±0.1%/°C

Ipsc Range: 0 to 19.99kA in steps of 0.01kA

Fuse: 5A, HBC, Anti-Surge ceramic, DIN 5 X 20mm

Transient Protection: VDR at input
Thermal Protection: Electronic delay

Overvoltage: Category III

Complies with:
EMC: To BS EN 50081-1
BS EN 50082-1
LVD: To BS EN 61010-1

Housing: ABS

Dimensions: 190 x 90 x 54mm
Weight: 400gms approx

Includes: soft protective case, batteries, mains test lead (TL205), green wander lead (TL61) & manual

EZ2100 E-Ze Test™

Nominal Voltage Rating:
220 - 240 V

Voltage Range for Wiring Error Detection: 30 - 275 V

Open Loop indication: If open PE or PN Loop is detected, no impedance measurement occurs

Voltage Range for Impedance Measurement: 198 - 264 V
Frequency: 50 Hz

PE Loop Impedance Ranges:
0-8.99Ω, 9.0-89.9Ω, 90-899Ω, 900-1699Ω, 1700-3000Ω

PE Loop Impedance Accuracy:
0 - 8.99Ω ± 4% ± 0.05Ω
9.0 - 89.9Ω ± 5% ± 0.5Ω
90 - 899Ω, ± 5% ± 5Ω
900 - 1699Ω± 5% ± 30Ω
1700 - 3000Ω indicative

Voltage Accuracy: ± 4 %

Temperature Range: 0° to 40°

Overvoltage category: CAT III 300V
Supply: from mains
Dimensions: 145 x 85 x 53mm
Weight: 240g approx
Includes: carry case, mains lead & manual

Non Trip Earth (phase loop) Impedance Tester

A revolutionary 16th Edition tester with T-Safe™ non-trip earth loop impedance test.

The E-Ze Test™ performs:

- Non-trip earth loop test
- Voltage test
- Socket test

Using patented technology

Test readings scroll through in sequence on the clear, back-lit, 32 character display to show socket problems, or high/low voltage conditions. Then the earth loop impedance test result is displayed.

Complies with BS EN 61010, BS EN 61557 & BS 7671 (16th Edition).

No switches, just plug in and get the result

MAREZ2100	insulation tester	£199.00	●
TC2A	calibration	£27.00	◆
MARTL88	optional 3 way fused test leads	£34.75	

EZ2500 E-Ze Test™

Nominal Voltage Rating:
220 - 240 V

Voltage Range for Wiring Error Detection: 30 - 275 V

Open Loop indication: If open PE or PN Loop is detected, no Impedance Measurement occurs

Voltage Range for Impedance Measurement: 198 - 264 V
Frequency: 50 Hz

PE & PN Loop Impedance Ranges:
0-8.99Ω, 9.0-89.9Ω, 90-899Ω, 900-1699Ω, 1700-3000Ω

PE & PN Loop Impedance Accuracy:
0 - 8.99Ω ± 4% ± 0.05Ω
9.0 - 89.9Ω ± 5% ± 0.5Ω
90 - 899Ω, ± 5% ± 5Ω
900 - 1699Ω± 5% ± 30Ω
1700 - 3000Ω indicative

Voltage Accuracy: ± 4 %
Frequency Accuracy: ± 4 %
Temperature Range: 0° to 40°

Overvoltage category: CAT III 300V
Supply: From mains
Dimensions: 145 x 85 x 53mm
Weight: 240g approx
Includes: carry case, mains lead, 3 way fused test lead (TL88) & manual

Non Trip Earth Impedance Tester with PFC & PSC

An outstanding 16th Edition tester with T-Safe™ non-trip P-E and P-N loop impedance tests, plus PFC and PSC checks.

The E-Ze Test™ performs:

- Non-trip loop tests, P-E and P-N
- Voltage test
- Socket test
- PFC and PSC test

Test readings scroll through in sequence on the clear, backlit, 32 character display to show socket problems, or high/low voltage conditions. The loop impedance test results, PFC and PSC calculations are then displayed.

Complies with BS EN 61010, BS EN 61557 & BS 7671 (16th Edition).

P-E, P-N, PFC, PSC on one display

Switch free operation

Battery free operation

MAREZ2500	insulation tester	£279.00	●
TC2A	calibration	£27.00	◆

E-Ze Check™ Xtra Non-Trip Earth Loop Impedance

A unique new earth loop indicator with voltage and wiring checks.

Conventional indicators have the weakness that they only show if the earth is connected, they don't indicate how safe it is.

Martindale's new T-Safe™ Technology gives safe, earth loop impedance checking within carefully selected bands, without tripping the RCDs.

- Non-trip earth loop check
- Voltage test
- Socket test
- T-Safe™ technology
- Identifies faults other checkers can't
- For use in 13A mains socket only

MAREZ150 non-trip earth loop impedance indicator £55.20

EZ150

Nominal supply: 230V, 50 Hz

Earth loop impedance span: 0-1.7Ω, 1.7 to 5Ω, 5 to 10Ω, 10 to 100Ω, 100 to 200Ω, 200 to 500Ω

Earth loop threshold accuracy: ±(10% + 0.3Ω)

Voltage low indication: <195V

Voltage high indication: >270V

Open earth indication: >500Ω

Power consumption: <1.6 W

Overvoltage: CAT II/300 V

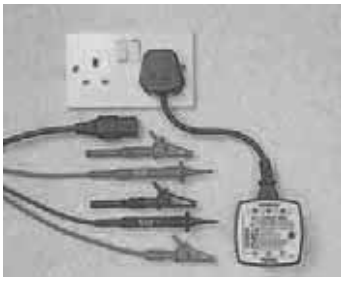
Dimensions: 65 x 65 x 50mm

Weight: 64g approx.

Like all other indicators this unit cannot detect common earth and neutral or earth neutral reversal.

This unit is an indicator and is not designed to give readings for completing certificates.

E-Ze Check™ Xtra Professional Kit



The E-Ze Check™ Pro Kit is supplied in a custom designed carry case for convenience. It has an IEC socket with an interchangeable 3 pin adaptor and TL88 3 way fused leads with croc clips, allowing testing at light fittings, distribution boards and terminals.

It uses the same technology as the EZ150 above, but in a multipurpose housing.

This housing allows connection either to an adaptor with a mains plug, or one with 3 way flying leads for use on lighting circuits or on bare wires.

This unit is an indication and is not designed to give readings for completing certificates.

MAREZ650 non-trip earth loop impedance indicator kit £99.60

EZ650

EZ150 Specification: see above

TL88 Specification: see page 63

Includes: mains lead (EX332 13A) & 3 way fused leads (TL88)

This unit is an indicator and is not designed to give readings for completing certificates.

"low cost earth loop indication of sockets and on lighting and other circuits"

CM67

Display: 4½ digit display

AC mA: 0-30-300mA

AC A: 0-30-60A

AC V: 300V, 600V

Accuracy: 1% ± 5 dgts

Conductor Diameter:
Max. 30mm Ø

Operating Environment: 0°C to 40°C at <80% R.H.

Battery Warning: BAT symbol shows when battery voltage is less than 2.5V ±0.1V

Auto Power Save: Power turns off automatically (enters sleep condition of 0.05mW battery consumption) after about 30 minutes from Power-on or any other switch operation.

Complies with: BS EN 61010

Overvoltage: CAT III, class 2, double insulated

Dimensions: 212 x 42 x 30mm

Weight: 220g approx

Includes: two 1.5V (AA) batteries, carrying case, test leads & manual

Earth Leakage Clamp Meter

A very high quality earth leakage clamp meter with resolution down to 0.01mA and an accuracy of up to 0.05mA. Ideal for identifying appliances or circuits which are causing RCDs to trip.

The comparison feature allows values between 1mA and 20mA to be set and the meter will beep above this level. This triggering allows you to identify the time of high leakage currents and so helps identify the offending equipment.

Earth leakage clamps operate by clamping around both the live and neutral conductors and measuring the difference between the currents flowing, allowing the “leakage value” to be calculated.

“quickly spots the causes of nuisance tripping”

MARCM67	earth leakage clamp	£299.00
TC2B	calibration	£39.00
MARTL55	optional fused test lead	£32.40

ELKIT2

MM47 specification: see page 23

CT60 specification: see page 24

Includes:
TL58 3 phase leads
TL47 unfused test leads
TT1P k-type probe

For a full specification of each tester visit
www.martindale-electric.co.uk

This kit gives low cost measurement of some of the 16th edition parameters, but is mainly used by fault finding technicians.

Electrician’s Kit

The Electrician’s Kit contains the MM47 Electrician’s multimeter, together with the CT60 clamp adaptor for AC/DC current to 600A, and a K-type thermocouple for temperature readings up to 750°C.

The robust carry case also includes a set of GS38 fused leads (TL58) for the MM47 three phase rotation function as well as a standard set of multimeter test leads.

MARELKIT2	electrician’s Kit	£165.00
TC2A x 2	calibration (for 2 units)	£54.00

16th Edition / Part P Installation Kit

Total value £958.25

KIT2000

IN2003 specification: see page 9

RC2000 specification: see page 10

LP2000 specification: see page 10

Includes:
TL205 mains lead
TL88 3 way fused leads
TL47 unfused test leads
batteries
aluminium case

For a full specification of each tester visit www.martindale-electric.co.uk

"increases productivity by letting more than one person test at a time"

This kit is the ideal solution to basic 16th Edition and Part P testing.

Contains an IN2003 250/500/1000V insulation tester, LP2000 loop and PSC tester and an RC2000 RCD tester, together with TL88 3 way fused test leads and IEC mains lead.

The instruments are custom fitted into a slimline aluminium case with high density, impact resistant foam.

- Does everything for compliance with Part P as well as BS7671
- Top of the range insulation and continuity tester offering 250, 500 & 1000V tests.
- Fast and accurate autoranging loop tester which carry out phase earth and phase neutral testing
- Effortless, rapid RCD testing
- Aluminium case with high density foam inlay for long life
- All instruments securely held in one easy-to-carry kit

total value £958.25
SAVE £59.25

MARKIT2000	16th Edition / Part P installation kit	£899.00
TC2A x 3	calibration (for 3 units)	£81.00
MARTL57	optional fused test leads for insulation testing	£32.40

KIT2500

IN2103 specification: see page 7

RCD specification: see page 10

EZ2500 specification: see page 11

Includes:
TL205 mains lead
TL88 3 way fused leads
TL47 unfused test leads

For a full specification of each tester visit www.martindale-electric.co.uk

Professional 16th Edition/Part P Installation Kit

This kit complies fully with Part P.

Within the strong case is a highly specified insulation tester, which has polarisation index and dielectric absorption ratio functions, and a loop and RCD tester.

The non trip earth tester quickly calculates PSC & PFC as well as allowing hands free PE & PN loop testing.

The instruments come in a foam lined aluminium case with fused and unfused test leads.

- Does everything for compliance with Part P as well as BS7671
- High spec insulation tester with 250/500/1000 volts
- Polarisation index and dielectric absorption ratio functions
- Earth Loop Test with automatic calculation of PSC & PFC
- Hands free PE & PN loop testing
- Effortless, rapid RCD testing
- Aluminium case with high density foam inlay for long life

total value £1015.95 SAVE £76.95

MARKIT2500	Professional 16th Edition / Part P installation kit	£939.00
TC2A x 3	calibration (for 3 units)	£81.00

4kV Flash Tester

This digital flash tester is a portable mains operated instrument, capable of operating from either 115V or 230V supplies at 50/60Hz. It can apply up to 4kV AC and displays both output voltage and leakage current on the twin 3½ digit LCD's.

The fail lamp illuminates and the buzzer sounds in the chosen modes:

Trip - will trip when pre-determined current is exceeded;

Breakdown - fast transients can trigger the trip;

Burn - where the trip function is by-passed and the fault current flows continuously to expose the fault;

Hold shows the breakdown voltage and the leakage current.

METE3640	4kV flash tester	£975.00
TC2D	calibration	£72.00

E3640

Power Requirement:
115/230 Volts ±15% 50/60Hz 40VA

Fuses:
230V - 5x20mm 0.25A, HBC, Type F
115V - 5x20mm 0.5A, HBC, Type F

Output Voltage Range:
0 - 2.2, 0 - 4.2kV 50/60Hz

Output Voltage Accuracy:
± 2% of reading ± 1 digit

Leakage Current: 0 - 5 mA (nominal) 50/60Hz in 10µA steps

Leakage Current Accuracy:
±2% of reading ± 1 digit

Trip Level Range: 0 to 3mA 50/60Hz

Setting Accuracy:
±5% of full range

Trip Response Leakage: Will trip for fault duration >5mS but not for <100µS

Breakdown: Will trip for fast transients of 30µS and above

Complies with: EMC: To BS EN 50081-1 and BS EN 50082-2

Safety & Flash Test: BS EN 61010-1

Dimensions: 330 x 263 x 144mm

Weight: 4000g approx

Includes: flash gun, earth lead, mains power lead and manual

5kV Insulation Tester

Having both battery and mains operation and four selectable DC test voltages (500V, 1kV, 2.5kV & 5kV), this tester measures insulation resistance from 100kΩ to 100GΩ. The large, clear analogue scale also displays AC or DC voltage up to 1000V. Latching test switch allows hands free testing.

With full over-voltage and over-current protection for measurements and 4-16 hours operation from re-chargeable NiMH batteries, the E3511 comes complete in a rugged carry case. Standard accessories include locking 2m test leads with prods and clips.

METE3511	5kV insulation tester	£1175.00
TC2D	calibration	£72.00
METDFK0075/A	replacement 2m test leads	£140.00
METDFK0075/C	optional 10m test leads	£175.00

E3511

Insulation Resistance Range:
100kΩ to 100GΩ

Insulation Range Accuracy:
±1.5% of scale length

Insulation Range Temperature Coefficient: <0.04% of scale length/°C

Voltage Range:
1000 volts AC or DC

Voltage Range Accuracy:
±1.5% of scale length

Test Voltages:
500V, 1kV, 2.5kV, 5kV DC

Test Voltage Accuracy:
±5% at 10MΩ

Break Point Current: 0.5mA nominal
Short Circuit Current: 1.2mA nominal

Ripple Voltage: <10V peak to peak (R<10MΩ)

Housing: yellow ABS, black & clear polycarbonate

Dimension: 330 x 263 x 144mm
Weight: 4200g approx (incl batteries)

Includes: 2m test leads & crop clips, accessory bag

7A501C

Insulation Range: 0 - 50MΩ

Test Voltage:
500V DC±10% across 1MΩ

Short Circuit Current: <2mA

Accuracy:
±1.6mm of scale arc length

CONTINUITY Ω

Range: 0 - 50Ω

Test Voltage: Nominal 200mV

Short Circuit Current: <26mA

Accuracy:
±1.6mm of scale arc length

Complies with: BS 1259

Supply: batteries 1.5V AA IEC R6B

Housing: Shatterproof ABS case

Dimensions: 32 x 82 x 60mm

Weight: 600g approx

Includes: case, leads (METDFK0113) & safety tool to remove battery cover

Safety Insulation Tester

In service for 45 years in mines, on petrol sites and in hazardous areas e.g. in the presence of Methane, Ammonia and Hydrocarbons.

This well proven design is a solution to carrying out electrical safety testing in hazardous environments.

Use of this instrument in such environments should be considered only by a suitably qualified and knowledgeable person.

While this product does not qualify for Atex approval, safety officers must evaluate the risks of failing to perform adequate electrical safety testing.

The product is now only available for sale where the intended place of use is outside the EU.

supplied with case

MET7A501C	safety insulation tester	£645.00
TC2A	calibration	£27.00
METDFK0113	replacement test leads	£23.00
METPA24249A	replacement carry case	£52.00

E1620

Ranges:
0 to 20mΩ in steps of 0.01mΩ,
0 to 200mΩ in steps of 0.1mΩ,
0 to 2Ω in steps of 1mΩ,
0 to 20Ω in steps of 10mΩ.

Accuracy: ±0.5% of reading ±2 digit.

Test Current:
1A DC on 20mΩ range
100mA DC on 200mΩ range
10mA DC on 2Ω & 20Ω range

Test Current Accuracy: ±10%

Max. Circuit Resistance:
1.2Ω on 20mΩ range
(with 9V battery voltage)
15Ω on 200mΩ range
150Ω on 2 and 20Ω ranges

Complies with:
LVD: To BS EN 61010-1
EMC: To BS EN 50081-1
BS EN 50082-1

Dimensions: 190 x 90 x 60mm

Weight: 750g approx (incl batteries and leads)

Includes: carry case, batteries and Kelvin leads (DFK0094)

Milliohm Meter

This is suitable for testing the quality of compression joints, switch contacts and measuring the winding resistance of transformers, motors and generators.

The E1620 is a full feature precision instrument in a handheld case.

Safety fusing against mains voltages up to 240V AC.

Supplied complete with gold-plated Kelvin test probes.

METE1620	milliohm meter	£495.00
TC2B	calibration	£39.00

Earth/Ground Tester

"low cost earth testing"

This is a very handy, easily portable and simple to use earth tester. A large liquid crystal display shows earth/ground resistance and continuity.

The E1610 uses the four terminal measurement method in which the resistance of the current circuit test leads does not affect the reading. The resistance of the potential circuit test leads can also be ignored because the measuring circuit has an input buffer stage to prevent loading of the earth resistance under test.

The carrying case, supplied, has been designed to allow the tester to be operated in the case.

Vital for very low resistance testing.

Requires earth spike kit (see below).

METE1610	earth/ground tester	£350.00
TC2B	calibration	£39.00

E1610

Earth Resistance Ranges:
0 to 20Ω in steps 0.01Ω, 0 to 200Ω in steps 0.1Ω, 0 to 2000Ω in steps 1Ω
± 2% of reading ±2 digit

Test Current range:
10mA AC RMS nominal on 20Ω
1mA AC RMS nominal on 200Ω
0.1mA AC RMS nominal on 2000Ω

Test Frequency: 128Hz nominal

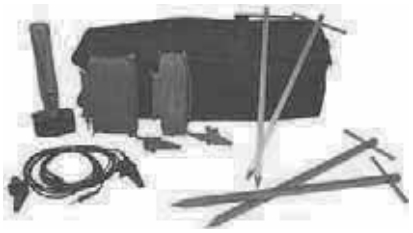
Interference: Interference voltages of 5V RMS, 50/60 Hz in the potential circuit will not affect the reading by more than ± 0.5%

Max Current Spike Resistance:
2kΩ typical on 20Ω range
5kΩ typical on 200Ω range
50kΩ typical on 2000Ω range
Max Potential Spike Resistance:
2.2kΩ typical on 20Ω range
22kΩ typical on 200Ω range
52kΩ typical on 2000Ω range

Maximum Output Voltage: 30V RMS
Open Circuit: Displayed as overranging
Voltage Withstand: 240V AC between any two terminals
Complies with:BS EN 61010-1

Dimensions: 190 x 90 x 54mm
Weight: 500gms approx (incl batteries)

Earth Kits



These three and four wire heavy duty, professional spike kits contain all the cables and spikes needed to carry out earth testing (three wire ER2KIT) and soil resistivity testing (four wire ER4KIT).

MARER2KIT	2 wire earth kit	£129.00
MARER4KIT	4 wire earth kit	£189.00

ER2KIT

Contents: 1 x 50m cable, 1 x 30m cable, 1 x 3m cable, 2 x spikes, 1 x hammer, 1 x bag.

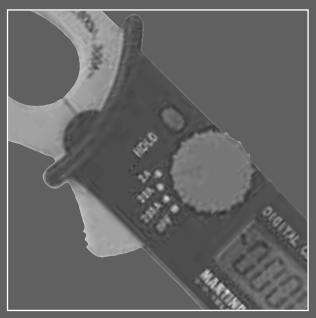
ER4KIT

Contents: 1 x 50m cable, 1 x 30m cable, 2 x 3m cable, 4 x spikes, 1 x hammer, 1 x bag

to see more details of our Metrohm products check out our website

www.martindale-electric.co.uk

Multimeters & Clamps



page		
21	MM34	general purpose multimeter
21	MM35	autoranging multimeter
21	MM37	safety sensing multimeter
22	AM5	analogue multimeter
22	MM42	low cost multimeter
22	MM44	general purpose multimeter
23	MM45	autoranging multimeter
23	MM47	electrician's multimeter with phase rotation & temperature
23	MM53	large format multimeter
24	MM84	true RMS multimeter
24	CT60	clamp adaptor
25	CM67	earth leakage clamp
25	CM52	200A mini clamp meter
25	CM54	1000A AC clamp meter
26	CM56	1000A AC clamp meter
26	CM58	true RMS 1000A AC/DC clamp meter

Multimeters & Clamp Meters

Multimeter Comparison Chart

Best accuracies shown ± (% readings + digits)

	DCV	ACV	Ω	ACA	DCA	Frequency	Capacitance	True RMS	Holster	Price
MM34	1mV - 600V 2% + 1	100mV - 600V 2.5% + 4	0.1Ω - 20MΩ 2% + 1		0.1µA - 10A 2.5% + 2					£27.80
MM35	100µV - 600V 0.8% + 1	100µV - 600V 2% + 4	0.1Ω - 30MΩ 1.5% + 3	0.1µA - 10A 2% + 4	0.1µA - 10A 2% + 1					£34.75
MM37	0.1mV - 600V 1.2% + 1	100µV - 600V 2% + 4	0.1Ω - 20MΩ 1.5% + 4	0.1µA - 10A 2% + 4	0.1µA - 10A 1.5% + 1					£39.60
MM42	1mV - 600V 1.2% + 1	100mV - 600V 2% + 4	0.1Ω - 2000kΩ 1.5% + 1	-	1mA - 2A 2.5% + 2	-	-	-	✓	£39.95
MM44	0.1mV - 600V 0.8% + 1	0.1mV - 600V 1.5% + 3	0.1Ω - 2000MΩ 1% + 4	0.01mA - 10A 2% + 4	0.01mA - 10A 1% + 1	1Hz - 15mHz 0.5% + 2	1pF - 20µF 4% + 10	-	✓	£57.75
MM45	100µV - 600V 0.8% + 2	0.1mV - 600V 2% + 4	0.1Ω - 32MΩ 1.5% + 3	0.1µA - 10A 2.5% + 4	0.1µA - 10A 2% + 1	-	-	-	✓	£59
MM47	100µV - 600V 1.2% + 1	1mV - 600V 1.5% + 4	0.1Ω - 2000MΩ 1% + 4	-	-	10Hz - 40kHz 0.1% + 2	0.01µF - 20mF 4% + 10	-	✓	£79
MM53	200mV - 1000V 0.25% + 2	200mV - 750V 1.2% + 3	0.1Ω - 20MΩ 0.8% + 2	0.1µA - 10A 1.2% + 3	0.1µA - 10A 1% + 1	-	-	-	✓	£59
MM84	10µV - 1000V 0.05% + 3	10µV - 750V 1% + 10	0.01Ω - 20MΩ 0.15% + 3	0.01µA - 20A 0.8% + 10	0.01µA - 20A 0.5% + 5	0.1Hz - 200kHz 0.5% + 3	-	✓	✓	£139

for full spec sheets go to www.martindale-electric.co.uk

Clamp meter Comparison Chart

Best accuracies shown ± (% readings + digits)

	AC Current	DC Current	AC Volts	DC Volts	Ohms	Continuity Beeper	Frequency	Jaw Diameter	True RMS	Hold	Min / Max	Crest Factor	Price
CM52	0.001A-200A	-	-	-	-	-	-	21mm	-	✓	-	-	£59.95
CM54	100mA-1000A 1.5% + 5	-	1V-750V 1.5% + 4	1V-1000V 0.5% + 1	0.1Ω-2GΩ 1% + 3	✓	-	57mm	-	✓	-	-	£89
CM56	100mA-1000A 1.5% + 5	-	1V-750V 1.5% + 4	0.1mV-1000V 0.5% + 1	0.1Ω-2000mΩ 1% + 3	✓	-	57mm	-	✓	-	-	£108
CM58	100mA-1000A 1.5% + 5	100mA-1000A 1.5% + 5	100µV-750V 1.5% + 4	100µV-1000V 0.5% + 1	0.1Ω-40MΩ 1% + 2	✓	0.01Hz-400kHz 0.1% + 4	57mm	✓	✓	✓	>3	£168
CM67	0.01mA-60A 2% + 5	-	0.1V-600V	-	-	-	-	30mm	-	✓	✓	-	£299

GS38 compliant fused test leads are recommended where meters are used on mains circuits.

MM34, 35 & 37

Display: 3½ digit LCD display with automatic polarity indication and automatic zero.

Diode test

Overvoltage: CAT III 600V

Dimensions: 143 x 68 x 47mm

Weight: 206gms approx (incl battery)

MM34

AC V: 100mV to 600V (2 ranges) (50Hz to 500Hz)

DC V: 1mV to 600V (4 ranges)

DC A: 0.1µA-10A (5 ranges)

Ohms: 0.1Ω to 20MΩ (5 ranges)

Battery test: 1.5V & 9V

Includes: test leads (TL16), battery & manual

General Purpose Multimeter

The MM34, low cost multimeter, has 4 main functions together with diode and battery test and a large clear display.

The sculpted shape makes it comfortable to hold and easy to position the central rotary switch.

MARMM34	general purpose multimeter	£27.50	●
TC2A	calibration	£27.00	◆
MARTL55	optional fused test leads	£32.40	

MM35

AC V: 100µV to 600V (5 ranges) (50 to 200Hz <32V & 50 to 60Hz >32V)
AC A: 0.1µA to 10A (5 ranges) (50 to 200 Hz)

DC V: 100µV to 600V (5 ranges)
DC A: 0.1µA to 10 A (5 ranges)
Ohms: 0.1Ω to 30MΩ (5 ranges)
Continuity buzz at: < 20Ω

Autoranging with range hold and manual range change

Weight: 206gms approx (incl battery)

Dimensions: 143 x 68 x 47mm

Included: test leads (TL16), battery & manual

Autoranging Multimeter

This autoranging multimeter is very easy to use. The range hold and change buttons give the option of full measurement control. With its clear display, the bargraph to help with changing readings and the function indicators, this is an instrument for everyone.

MARMM35	autoranging multimeter	£34.75	●
TC2A	calibration	£27.00	◆
MARTL55	optional fused test leads	£32.40	

MM37

AC V: 100µV to 600 V (4 ranges) (50Hz to 500Hz)
AC A: 0.1µA to 10A (4 ranges) (50Hz to 500Hz)
DC V: 0.1mV to 600 V (4 ranges)
DC A: 0.1µA to 10A (4 ranges)

Resistance: 0.1Ω to 20MΩ (4 ranges)
Continuity buzz: at <100Ω

Voltage Indicator (audible & visual): with the test leads removed this operates in any function or range position. No physical contact is required, just close proximity.

Dimensions: 143 x 68 x 47mm
Weight: 206g (incl battery)
Included: test leads (TL16), battery & manual

Safety Sensing Multimeter

A full function multimeter which constantly updates the maximum value memory and has a reading hold button.

The integral non-contact voltage indicator operates from all switch positions with an audible and visual indication of voltages above 70V AC. This gives automatic pre-warning of live circuits and increases user safety.

MARMM37	safety sensing multimeter	£39.60	●
TC2A	calibration	£27.00	◆
MARTL55	optional fused test leads	£32.40	

Multimeters & Clamp Meters

Low Cost Digital Multimeter

This is a simple low cost meter with all the basic multimeter functions including 1.5 & 9V battery test ranges.

It has the same safety and reliability as the rest of the series but if 10A AC/DC current ranges and more advanced features are required see the MM44, MM45 or MM47 meters.

The MM42 is ideal for basic volts and ohms measurement and is a good choice for simple electronic and educational applications.

MARMM42	low cost digital multimeter MM42	£39.95
TC2A	calibration	£27.00
MARTL55	optional fused test leads	£28.50

MM42

Display: 3½ digit display with automatic polarity and zero

AC V: 100mV to 600V (2 ranges) (50Hz to 500Hz)

DC V: 1mV to 600V (4 ranges)

DC A: 1mA to 2A (1 range)

Ohms: 0.1Ω-2000kΩ (5 ranges)

Diode & Transistor test

Battery test: 1.5V, 9V

Overvoltage: 600V CAT III

Dimensions: 147 x 70 x 39mm

Weight: 340g approx (incl battery)

Includes: holster, test leads (TL16), battery & manual.

General Purpose Multimeter

The best selling MM44 has 11 functions, including a 10A range, a basic accuracy of 0.8% and is suitable for most applications.

The meter has ceramic fuse protection and bleeps in the things are wrongly connected to prevent misuse.

It has an audible continuity check, measures capacitance and frequency and performs diode, transistor and logic tests.

MARMM44	general purpose multimeter	£57.75
TC2A	calibration	£27.00
MARTL55	optional fused test leads	£28.50

MM44

Display: 3½ digit display with automatic polarity and zero

AC V: 100mV to 600V (5 ranges) (50Hz to 500Hz)

AC A: 10µA to 10A (3 ranges) (50Hz to 500Hz)

DC V: 100µV to 600V (5 ranges)

DC A: 10µA to 10A (3 ranges)

Ohms: 100mΩ-2000MΩ (7 ranges)
Continuity: Buzz at <100Ω

Frequency: 1Hz to 15MHz (5 ranges, autoranging)

Capacitance: 1pF to 20µF (5 ranges)

Logic test: Hi 2.8V ± 0.8V
Lo 0.8V ± 0.5V

Diode & Transistor test

Battery test: 1.5V, 9V

Overvoltage: 600V CAT III

Dimensions: 147 x 70 x 39mm

Weight: 345g approx (incl battery)

Includes: holster, test leads (TL16), battery, spare fuse & manual.

MM45

Display: 3½ digit LCD with bar-graph & automatic polarity & zero.

AC V: 100µV to 600V (5 ranges) (50/60Hz)

AC A: 0.1µA to 10A (5 ranges) (50/60Hz)

DC V: 100µV to 600V (5 ranges)
DC A: 0.1µA to 10A (5 ranges)
Ohms: 100mΩ to 32MΩ

Continuity buzz: at <20Ω

Diode test & Auto power down
Overvoltage: 600V CAT III

Dimensions: 147 x 70 x 39mm

Weight: 345g approx (incl battery)

Includes: leads, battery (TL16), manual & protective holster

Autoranging Multimeter

This high specification autoranging multimeter is fast, safe and simple to use. The range hold and change buttons give the option of full measurement control.

The addition of a bargraph assists with varying signals. A clear digital display gives sharp accurate results.

MARMM45	autoranging multimeter	£59.00
TC2A	calibration	£27.00
MARTL55	optional fused test leads	£32.40

MM47

Display: 3½ digit LCD display with automatic polarity and zero

AC V: 1mV to 600V (3 ranges)
DC V: 100µV to 600V (4 ranges)
Ohms: 100mΩ to 2000MΩ (7 ranges)

Frequency: 10Hz-40kHz autoranging 1Hz resolution

Phase Rotation Indicator: 80-480V, 45 to 450Hz

Temperature: -20 to 750°C, -4 to 1400°F (k-type probes)

Capacitance: 0.01µF to 2mF (4 ranges)

Diode test
Overvoltage: 600V CAT III

Dimensions: 147 x 70 x 39mm

Weight: 340g approx (incl battery)

Includes: holster, battery, test leads (TL16), manual & k-type probe

Phase Rotation & Temperature Multimeter

This is the ideal electrician's multimeter. It has been designed to satisfy all the needs of a working electrician by including audible continuity, phase rotation, frequency and temperature measurement as well as the basic electrical functions.

Current ranges can be provided by using a suitable clamp adaptor. A K-type probe (included) allows temperature measurement.

MARMM47	phase rotation and temperature multimeter	£79.00
TC2B	calibration	£39.00
MARTL55	optional fused test leads	£32.40
MARCT60	600A clamp adaptor	£75.00
MARTL58	optional 3 phase leads for phase rotation	£42.75
	optional "k" type probes (pages 50-51)	

MM53

Display: 3½ digit display with large 17mm digits

AC V: 200mV to 750V (5 ranges)

DC V: 200mV to 1000V (5 ranges)

AC A: 0.1µA to 10A (6 ranges)

DC A: 10.1A to 10A (6 ranges)

Ohms: 0.1Ω to 20MΩ (6 ranges)

Continuity: Buzz at < 100Ω

Diode Test

Reading Hold & Maximum values

Dimensions: 189 x 87 x 37mm

Includes: test leads (TL16), holster, battery & manual

Large Format Multimeter

The large format multimeter is the next step up from the best selling MM44 multimeter. It has an improved accuracy of 0.25% and a large display. Data hold and max hold allow any individual measurement to be recorded or to monitor the largest value over a period of time.

- BS EN 61010
- Fast and simple to use
- Includes holster
- CAT III 1000V
- Diode test
- Data & Max hold

MARMM53	large format multimeter	£59.00
TC2B	calibration	£39.00
MARTL55	optional fused test leads	£32.40

Multimeters & Clamp Meters

True RMS Multimeter

This is Martindale's top of the range multimeter. It combines a large 4½ digit display with a basic accuracy of 0.05% and true RMS capability.

It accurately measures the frequency of mains supplies and up to 20A AC or DC. It also has a continuity buzzer, an audible wrong range warning and data hold to freeze the current reading.

This combination of high specification and broad capabilities make it outstanding value for money.

MARMM84	true RMS multimeter	£139.00
TC2B	calibration	£39.00 ◆
MARTL55	optional fused test leads	£32.40

MM84

Display: 4½ digit display with large 17mm digits.

AC V: 10µV to 750V (5 ranges) (50Hz to 500Hz) True RMS

AC A: 10µA to 20A (5 ranges) (50 Hz to 500Hz) True RMS

DC V: 10µV to 1000V(5 ranges)

DC A: 0.10µA to 20A (5 ranges)

The 20A inputs have a fuse which will blow after 30 seconds

Ohms: 10mΩ to 20MΩ (6 ranges)

Continuity: Buzz at < 150Ω

Diode Test

Logic Test: Hi 2.8V ± 0.8V
Lo 0.8V ± 0.5V

Frequency: 0.1Hz to 200kHz (3 ranges)

Dimensions: 189 x 87 x 37mm

Includes: test leads (TL16), holster, battery & manual

Clamp Adaptor

A general purpose 600A AC/DC current clamp adaptor, suitable for use with multimeters having 0 - 600mV AC/DC capability.

The unit is supplied with a flying lead, terminated with 4mm plugs which fit into the voltage and common/earth inputs of a multimeter having an input resistance of 10kΩ or greater.

The CT60 converts AC or DC current to AC or DC voltages at the rate of 1mV per amp allowing a direct amp reading from the meter.

This adaptor is compatible with all Martindale multimeters except for the MM53.

electricians kits also available see page 14

MARCT60	600A clamp adaptor	£75.00 ●
TC2A	calibration	£27.00 ◆

CT60

DC CURRENT
Ranges: 0 - 600A
Accuracy: ± 2% + 2A

AC CURRENT:
50Hz - 400Hz
Ranges: 0 - 600A
Accuracy:
0 - 400A ± (2% reading + 2A)
400A - 500A ± (3% reading + 2A)
500A - 600A ± (6% reading + 1A)

Accuracy: apply at 23°C ±5°C and 70% RH max

OUTPUT: 0 - 600mV for 0 - 600 A (AC/DC)

Operating environment:
0°C to 50°C at <70% RH

Storage: -20°C to 70°C max at <80% RH

Low Battery Indication

Zero Adjust

Connection: fits all standard multimeters with 4mm sockets

Conductor size: 30mm max

Dimensions: 178 x 70 x 33mm

Weight: 290g approx

CM67

Display: 4 digit display

AC mA: 0-30-300mA

AC A: 0-30-60A

AC V: 300V, 600V

Accuracy: 2% ± 5 dgts

Dimensions: 212 x 42 x 30mm

Weight: 220g approx

Includes: two 1.5V (AA) batteries, carrying case, test leads & manual

Earth Leakage Clamp Meter

A very high quality earth leakage clamp meter with resolution down to 0.01mA and an accuracy of up to 0.05mA. Ideal for identifying appliances or circuits which are causing RCDs to trip.

Display hold helps use in awkward places. Low pass filter eliminates frequencies above 150Hz, avoiding false readings.

MARCM67	earth leakage clamp	£299.00
TC2B	calibration	£39.00 ◆

CM52

At 23°C ± 5°C RH 75% less

Display: 3.5 digit LCD with annunciators

Measuring Range: 2A/20A/200A AC

Overrange Indication: "OL" flashes on the highest digit

Operating temperature: 0° to 40°C at <90% RH

Overvoltage: CAT III 300V

Dimensions: 145 x 54 x 26mm

Weight: 70g approx

Includes: battery, carry case & manual

200A Mini Clamp Meter with 3 current ranges

This is a low cost 200A mini clamp meter with 2A, 20A and 200A ranges, display hold and auto power down.

This small current clamp is shirt pocket-sized for maximum convenience. The small jaws make it easy to use and the 3 current ranges accurately cover the majority of applications.

MARCM52	200A mini clamp meter	£59.95 ●
TC2A	calibration	£27.00 ◆

CM54

Display: 3½ digit LCD with large 21mm digits

AC V: 1V to 750V (50Hz to 500Hz)
Accuracy: ± (1.5% rdg + 4 dgts)

DC V: 1V to 1000V
Accuracy: ± (0.5% rdg + 1 dgt)

AC A: 100mA to 1000A (2 ranges) (50/60Hz)

Resistance Ranges: 200Ω, 20kΩ, 20MΩ, 2000MΩ

Resolution: 0.1Ω on 200Ω range

Accuracy range:
± (1.2% rdg + 4 dgts) 200Ω
± (1.0% rdg + 3 dgts) on 20kΩ
± (2.0% rdg + 5 dgts) on 20MΩ
± (5% rdg + 10 dgts) on 2000MΩ

Continuity: Buzz at <75Ω

Max conductor:
57mm Ø or 70 x 18mm bus bar

Dimensions: 277 x 102 x 49mm

Weight: 540g approx (incl battery)

Includes: battery, test leads (TL16), soft carry case & manual

1000A AC Clamp Meter

The CM50 range of clamps from Martindale combine outstanding specifications, measuring capabilities and careful design to provide the most cost effective clamps available.

The CM54 is a low cost 1000A AC meter with a large jaw size and voltage and resistance ranges. It is the ideal basic clamp meter for AC current use and also has the functions of a standard multimeter.

The Max control allows you to measure the maximum reading, and the Hold Button freezes the current reading, which is very useful when working in cramped places.

- 1000A AC
- Multimeter functions

MARCM54	1000A AC clamp meter	£89.00
TC2A	calibration	£27.00 ◆
MARTL55	optional fused test leads	£32.40
MARTC68	carry case	£12.95

Multimeters & Clamp Meters

1000A AC Clamp Meter

This has a large display combining a clear 3½ digit readout with a responsive 34 segment bargraph, useful for representing varying signals.

For general purpose use it is autoranging on AC and DC voltage, with resistance to 30MΩ and a beeper for the low resistance continuity range.

The CM56 also measures frequency with 0.1Hz resolution, allowing accurate determination of mains or generator frequencies. Reading Hold and AC Peak functions complete the impressive capability of this clamp.

MARCM56	1000A AC clamp meter	£108.00
TC2A	calibration	£27.00
MARTL55	optional fused test leads	£32.40
MARTC68	carry case	£12.95

CM56

Display: 3½ digit LCD bargraph

AC V: 1mV to 750V, autoranging (50Hz to 300Hz) (4 ranges)
Accuracy: ± (1.5% rdg + 4 dgts)

AC A: 10mA to 1000A (3 ranges) (50Hz to 400Hz)

DC V: 100µV to 1000V (5 ranges)
Accuracy: ± (0.5% rdg + 1 dgt)

Resistance Ranges: 320Ω, 3.2kΩ, 32kΩ, 320kΩ, 3.2MΩ, 30MΩ
Resolution: 0.1Ω on 320Ω range
Accuracy range:
± (1.0% rdg + 3 dgts) 320Ω to 320kΩ
± (1.5% rdg + 3 dgts) on 3.2MΩ
± (2.5% rdg + 5 dgts) on 30MΩ

Ohms: 100mΩ to 30MΩ (6 ranges)

Continuity: Buzz at <20Ω

Diode test

Frequency: 0.1Hz - 32kHz (3 ranges)

Max conductor: 57mm Ø or 70 x 18mm bus bar

Auto Power Off: After 10 minutes

Dimensions: 277 x 102 x 49mm

Weight: 540g approx

Includes: leads (TL16), case, battery & manual

True RMS 1000A AC/DC Clamp Meter

This meter is the top model in this outstanding range of clamps with true RMS AC voltage and current measurement.

It measures AC and DC current to 1000A, has voltage, resistance, frequency and capacitance functions and is autoranging (except voltage).

The bargraph has 42 segments for better resolution of changing readings. The CM58 has Max and Min reading memories, AC Peak and Hold features and Diode test. Manual range change/hold is provided for optional override of the autoranging functions.

MARCM58	true RMS 1000A AC/DC clamp meter	£168.00
TC2B	calibration	£39.00
MARTL55	optional fused test leads	£32.40
MARTC68	carry case	£12.95

CM58

Display: 3½ digit LCD bargraph

AC V: 100µV to 750V, autoranging (50Hz to 500Hz) (5 ranges)
Accuracy: ± (1.5% rdg + 4 dgts)

AC A: 100mA to 1000A (2 ranges) (true RMS, 50Hz to 400Hz)
Accuracy: 0-600A ± (1.5% rdg +5 dgts), >600A ± (2% rdg + 5 dgts)

DC V: 100µV to 1000V, autoranging (5 ranges)
Accuracy: ± (0.5% rdg + 1 dgt)

DC A: 100mA to 1000A (2 ranges)
Accuracy: 0-600A ± (1.5% rdg + 5 dgts), 600-800A ± (2.5% rdg + 5 dgts) >800A ± (3.5% rdg + 5 dgts)

Ohms: 100mΩ to 40MΩ (6 ranges)

Capacitance: 1pF to 40µF, autoranging (5 ranges)

Frequency: 0.1Hz to 400kHz, autoranging (5 ranges)

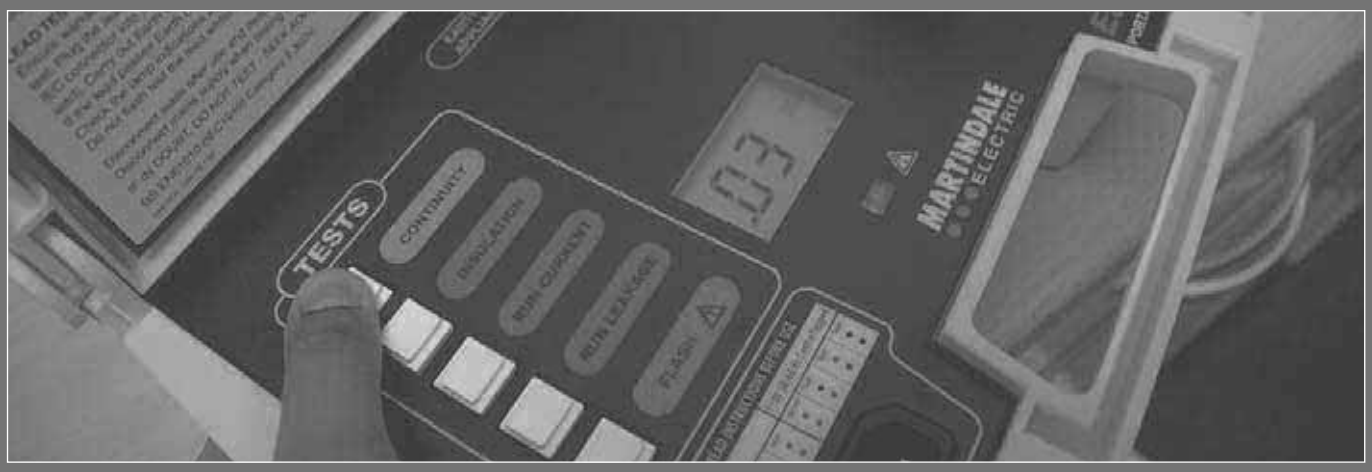
Continuity: Buzz at <40Ω

Max conductor: 57mm Ø or 70 x 18mm bus bar

Diode test

Dimensions: 277 x 102 x 49mm
Weight: 540g approx
Includes: leads (TL16), case, battery & manual

PATs



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28	EPAT1600	“legal minimum” manual PAT tester
29	EPAT2100	manual PAT tester with flash
30	LAB1	small pass labels
30	POLY1	polyester pass labels
30	LAB2	paper pass labels
30	FAIL1	fail labels
30	MS1	mark & seal labels
30	BAR1	appliance barcode labels
30	BAR2	combined barcode & pass appliance labels
30	MICRO	microwave test labels
31	MPATPLUS	micropat+ downloading PAT tester
32	SHISFEXPRESS	shire express software
32	TL151-TL154	three phase adaptor leads
32	BARCCD	PAT barcode reader
32	TL166	PAT flash gun
33	LT SERIES	extension lead testers
33	IEEPATS2	IEE handbook
33	PATREG	portable appliance register
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EasyPAT Manual PAT Tester - legal minimum

- Does both mandatory tests and has a built in fuse test
- 25A, 8A and 100mA (for computers, etc) earth bond tests selectable with a simple rocker switch
- Incorporates an extension lead tester to test IEC leads (can also be used to test 110V extension leads with a MAREX331 adaptor)
- Tests both 110V and 240V appliances for 240V supply

PAT training courses also available see page 34

The EasyPAT 1600 is a legal minimum tester suitable for high speed low cost testing.

See page 30 for labels 32 & 33 for accessories

"The IEC lead test feature really makes this excellent value"

MAREPAT1600	easyPAT 1600 manual PAT tester	£496.00
TC2B	calibration	£39.00
MAREX331	optional adaptor to test 110V plug to 110V socket leads	£12.95
MARTL66	replacement earth bond lead	£29.80

EPAT1600

INSULATION TEST
Test Voltage:
500V DC -0% +20% at 0.5MΩ
Short Circuit Current:
1.5mA DC nominal
Display Range: 0 - 19.9MΩ
Accuracy Of Indication:
±5% of reading ±1 digit

EARTH CONTINUITY (8A & 25A)
Test Voltage: 6V AC nominal with no load
Test Current: 25A AC nom @ 0.1Ω, 8A AC nom @ 0.1Ω

Display Range: 0 - 1.99Ω
Accuracy of Indication:
±10% of reading ±2 digits

EARTH CONTINUITY (100mA)
Test Voltage:
130mV DC nominal open circuit
Test Current:
100mA DC nominal constant current
Range: 0 - 1.99Ω
Accuracy of Indication:
±10% of reading ±2 digit

FUSE TEST
Test Voltage: 6V AC nominal
Overrange threshold: 10kΩ nominal
Zero range threshold: 800kΩ nominal

LEADS
Mains: 1.5 metre fixed lead, with a 13A moulded plug
Earth Continuity: 3metre long, detachable lead, heavy duty shrouded crocodile clip.
230V IEC Adaptor: 13A BS 1363 plug to IEC320 connector, 230mm long.

SOCKETS
Mains: 230V 13A to BS 1363
110V 16A to BS 4343
Lead test: IEC320

LAMPS
Over Temperature: Red LED which illuminates when the temperature limit for the instrument has been exceeded. LED extinguishes when unit cools.
Lamp 1/ Lamp 2: Red LED's which illuminate to indicate lead 'polarity' for extension lead test facility.

SUPPLY
Supply Voltage: 230V±10% 50/60Hz
Power Consumption: 10/220VA

Complies with
EMC: Meets BS EN 50081-1
BS EN 50082-1
LVD: Meets BS EN 61010-1

Housing: ABS/polycarbonate

Dimensions: 330 x 263 x 144mm

Weight: 4kg approx

Includes: manual, removable earth bond lead (TL66), adaptor to test 230V plug to socket leads (EX332).

EPAT2100

INSULATION TEST
Same as EasyPAT 1600
(see opposite)

EARTH CONTINUITY (8A & 25A)
Same as EasyPAT 1600
(see opposite)

EARTH CONTINUITY (100mA)
Same as EasyPAT 1600
(see opposite)

RUN CURRENT TEST
Range: 0-19.9A
Usable Range: 0 - 13.0A
Accuracy: ±10% of reading ±1 digit

EARTH LEAKAGE TEST
Range: 0 - 19.9mA
Accuracy: ±10% of reading ±1 digit

FLASH TEST
Test Voltage: 1.5kV AC - Class I.
3.0kV AC - Class II
Display Range: 0-19.9mA AC
Usable Range: 0-3mA AC (current trip @ 4mA nominal)
Accuracy: ±5% of reading ±1 digit

LEADS
Earth Continuity: 1.5 metre long, detachable lead with a heavy duty, shrouded crocodile clip.
Flash Gun: A safety gun, giving extra user protection for flash testing.
110/240V Adaptor:
110V 16A plug (BS 4343) to 240V 13A free socket (BS 1363)
230V IEC Adaptor: 13A BS 1363 plug to IEC320 connector, 230mm long.

SOCKETS
Mains: 240V 13A to BS 1363.
110V 16A to BS 4343
Flash: 4mm high voltage safety socket
Lead test: IEC 320

LAMPS
Flash: Neon lamp which illuminates when flash test is active.
Over Temperature: Red LED which illuminates when the temperature limit of the instrument is exceeded.
Lamp 1/ Lamp 2: Red LED's which illuminate to indicate lead 'polarity' for extension lead test facility.

SUPPLY
Voltage: 110V/240V ±10% 50/60Hz
Power Consumption: 10/220V A (excl run)

Complies with
EMC: Meets BS EN 50081-1
BS EN 50082-1
LVD: Meets BS EN 61010-1

Dimensions: 330 x 263 x 144mm

Weight: 4.6kg approx

Includes: manual, removable earth bond lead (TL66), flash probe (TL166) and 110V adaptor (TL150). Adaptor to test 230V plug to socket leads (EX332). All contained in attached carry bag.

EasyPAT Manual PAT Tester - professional

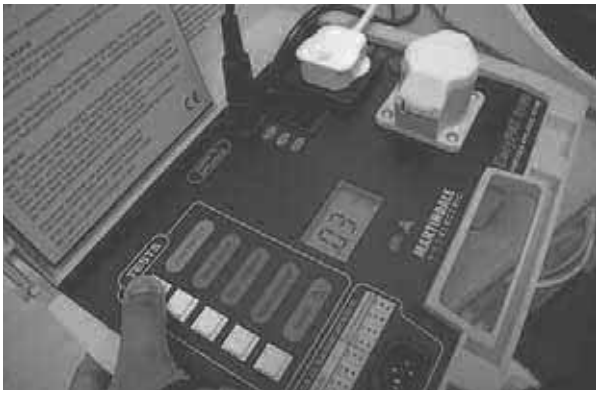
- Does ALL 5 tests
- Tests at either 110V or 230V, dependant on supply voltage
- No need for computer links
- 25A, 8A and 100mA (for computers, etc) earth bond tests selectable with a simple rocker switch
- Now supplied complete with a built in extension lead tester
- Tests 110V appliances from 110V supplies and 240V appliances from 240V supplies.

A high speed, fully specified dual voltage PAT tester which is ideal for contractors and workshops. Simple push button test selection maximises productivity.

With an excellent test result display, the EasyPAT 2100 is the best choice in manual testers. The flash test is particularly useful if any repairs are carried out.

See pages 32 & 33 for accessories and page 30 for labels

"Pressing one button per test speeds it up"



MAREPAT2100	easyPAT 2100 manual PAT tester	£748.50
TC2C	calibration	£55.00
MAREX331	optional adaptor to test 110V plug to 110V socket leads	£12.95

Pats & Accessories

Small Pass Labels LAB1

Paper labels suitable for plug tops and use on small appliances.

Rolls of 500 (30 x 20mm)

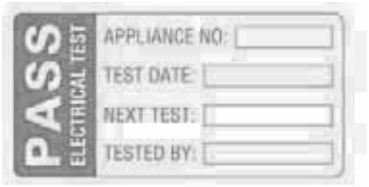
MARLAB1 £12.50 ●

Pass Labels POLY1

These are higher quality pass labels made of polyester for harsh environments, or if subject to frequent cleaning and abrasion.

Rolls of 500 (50 x 25mm)

MARPOLY1 £27.00 ●



Pass Labels LAB2

Paper pass safety test labels are designed to be replaced with each inspection.

Rolls of 500 (60 x 30mm)

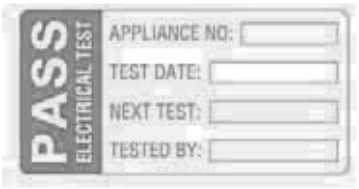
MARLAB2 £13.50 ●

Fail Labels FAIL1

These fail labels are essential to prevent re-use of unsafe equipment which has failed a PAT test.

Rolls of 100 (60 x 30mm)

MARFAIL1 £5.00 ●



Mark & Seal Labels MS1

These labels allow test details to be written on them and then the information is sealed in by sticking down the transparent flap. This provides a very high degree of protection against abrasion, dirt and erosion from cleaning fluids, etc.

Rolls of 500 (60 x 30mm)

MARMS1 £50.00 ●

Appliance Labels BAR1

Bar code labels identify appliances with a unique number and corresponding bar code. Labels are produced on high quality polyester and are very durable. They withstand environments where ordinary paper labels would be unsuitable, e.g. on kettles, in greasy or dirty environments and are resistant to cleaning materials.

Rolls of 500 (50 x 25mm)

MARBAR1 £35.00 ●

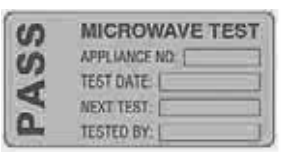
Separate appliance no. labels should be permanently attached to appliances whereas the pass test label is replaced after each test. Compatible with all current PAT Testers.

Appliance Pass Labels BAR2

Combined barcode and pass label can be fitted directly to the appliance. On re-test a new MARPOLY1 label is applied over the old test information on the bottom half of the label. Material is silver polyester. Configured to Code 39. Rolls of 500 (52 x 52mm).

MARBAR2 £40.00 ●

Microwave test labels MICRO



These labels show that appliances have been tested for microwave leakage.

Rolls of 500 (50 x 25mm)

MARMICRO set of 500 £35.00 ●

all labels now available in blister packs

MPATPLUS

INSULATION TEST
Test Voltage: 500V DC - 0% + 20%
Short Circuit Current: 1.5mA DC nominal
Display Range: 0 to 19.9MΩ
Accuracy: ±5% ±1 digit

EARTH CONTINUITY TEST
Test Voltage: 6V AC nominal with no load
Test Current:
25A AC nominal
100mA (soft test) for IT equipment
Display Range: 0 to 1.99Ω
Accuracy: ±10% ± 1 digit

RUN CURRENT TEST
Display Range: 0 to 3.1kVA
Usable Range: 0 - 13.0A
(Dependent on mains plug fuse)
Accuracy: ±10% ±1 digit at nominal 240V

EARTH LEAKAGE TEST
Display Range: 0 to 6mA AC.
Accuracy: ±10% ±1 digit

FLASH TEST
Test Voltage: 1.5kV AC - Class I
(at nom 240V AC) 3kV AC - Class II
Display Range: 0 to 3.0mA AC.
Accuracy: ±5% ±1 digit

MEMORY: 1000 sets of results can be stored

LEADS & ADAPTORS
1.5m fixed mains AC lead with a 13A moulded plug. 3m fixed earth continuity lead with heavy duty croc clip. 1.3m detachable flash gun. 110V 16A plug (BS 4343) adaptor to 240V 13A free socket (BS 1363).

SOCKETS
Mains/AC: 240V 13A to BS 1363, 110V 16A to BS 4343.
Serial Interface: Printer/computer output using a 9 pin 'D' type connector RS232.
Flash: 4mm high voltage safety type.

Flash: Neon lamp illuminates when flash test is selected.

LCD: 2 lines x 20 characters, liquid crystal high contrast display.

Complies with
EMC: Meets BS EN 50081-1
BS EN 50082-1
LVD: Meets BS EN 61010-1

Housing: polycarbonate/ABS

Dimensions: 330 x 263 x 144mm

Weight: 4.75kg approx

Includes: manual, removable earth bond lead (TL66), flash probe (TL166) and 110V adaptor (TL150) all contained in a carry bag attached to the unit.

MicroPAT + Downloading PAT Tester

"Well specified downloading tester with simple 2 digit test codes"

The MicroPAT+ has improved internal design to speed up testing & downloading and allows user selection of pass levels. This is one of the fastest-to-use computerised testers available today and it will significantly increase your productivity.

Tests show that a simple selection procedure with dedicated buttons for each test is the fastest way to do PAT testing. Compatible with PATS, Shire Safety First and Safety First Express software. Optional barcode reader interprets industry standard barcodes.

- Downloads to printer/computer
- Dual voltage 110 & 240V based on supply voltage
- Earth leakage & operation tests
- Earth bond at 25A & 100mA
- Flash test with pistol probe

See pages 32 & 33 for accessories and page 30 for labels

See page 33 for an extension lead tester (MARLTDV)

MARMPATPLUS	microPAT + downloading PAT tester	£936.00
TC2C	calibration	£55.00 ◆
MARTL125	computer download lead	£24.95
SHISFEXPRESS	optional safety first express software	£495.00 ◆
MARLTDV	optional extension lead tester	£99.00
MARBARCCD	optional barcode reader	£275.00
MARTL135	optional serial printer lead	£24.95

Pats & Accessories

Shire Safety First Software

Martindale recommends Shire software for use with the MicroPAT+.

Shire software allows maintenance of comprehensive data records downloaded from a PAT and information such as description and notes can be added. Individual certificates, customised with a logo, or lists of passed items can be printed out. Check lists of tested appliances can be produced before re-testing, to assist in finding all the items from the previous year.

This software is also compatible with many other PATs and is very easy to use.

SHISFEXPRESS	shire safety first software	£495.00
MARTL125	computer download lead	£24.95
MARPATUSBADAPT	USB adaptor for PCs without serial ports	£34.50

SHISFEXPRESS

Compatible With:

Windows 95/98
Windows 2000
Windows XP
Windows NT4

Requires a serial port and download lead.

Systems with USB ports only will need a USB adaptor (PATUSBADAPT).

A TL125 download lead is required when used with the MicroPAT+.

Three Phase Adaptor Leads

These adaptors allow basic tests on 3 phase equipment, using a PAT.

TL151
16 Amp 4 pin delta style

TL153
32 Amp 4 pin star style

TL152
16 Amp 5 pin delta style

TL154
32 Amp 5 pin star style

MARTL151	16 amp 4 pin delta style lead	£29.95
MARTL152	16 amp 5 pin star style lead	£29.95
MARTL153	32 amp 4 pin delta style lead	£29.95
MARTL154	32 amp 5 pin star style lead	£29.95

TL151-TL154

Essential accessories for three phase PAT testing.

Allows a single phase PAT to carry out insulation and earth bond tests on 3 phase appliances.

PAT Barcode Reader

Remote sensing bar code readers make it easier to read bar codes, especially ones in hard to get at locations or on cables or leads. This speeds up testing significantly, reduces errors and produces major savings in time and money. Pre- configured for use with the MicroPAT+.

MARBARCCD	PAT barcode reader	£275.00

BARCCD

Supplied pre-programmed for use with MicroPAT+, connects directly to the data port and does not require a separate power supply.

"guarantees accurate data entry"

PAT Flash Gun

A safety gun, giving extra user protection for flash testing. Supplied with the EasyPAT2100 and MicroPAT+.

MARTL166	PAT flash gun	£59.00

TL166

Suitable for safe use with PATs generating a test voltage of up to 3kV DC.

Fitted with a 4mm connector.

LT SERIES

LTDV, LTDVR, LT240 & LT240R

All models can be used to check the continuity/bond of the safety earth and check the polarity of phase and neutral conductors. All models can be used to check conventional extension leads and IEC type detachable leads as found on IT equipment and domestic appliances.

Applied Test Voltage: 110V ±10% or 240V ±10% 50/60Hz

Installation (IEC1010): CAT II 300V

Leads: 240V BS 1363 to IEC line socket.110V BS 4343 to IEC line socket (DV models only)

Pollution (IEC1010): CAT II

Operating: 0°C to 35°C

Storage: -10°C to 50°C

Housing: ABS

Dimensions: 141 x 82 x 51mm

Extension Lead Testers LT Series

A full range of Martindale extension lead testers for all makes of PAT. These units include an integral IEC mains lead test feature and are essential extras for anyone carrying out PAT tests.

LTDVR - Dual Voltage (110V & 240V) for Seaward PAT2000iee, PAT2000, PAT1000s, IT1000, PAT1000x, Supernova, Europa, Europa PAC & Megger PATS, (except PAT4 & PAT32) Robin SmartPAT3500 and PAT5500.

LT240R - Single voltage (240V) same PATs as the LTDVR.

LTDV - Dual voltage (110V & 240V) for EasyPAT, MicroPAT, PAC1500xi, PAT1900xi, PAT2100xi, PAT500H, MPAT40, MPAT60, Megger PAT4, Robin SmartPAT3000 and PAT5000 and all Edgcumbe (Metrohm) PATs.

LT240 - Single voltage (240V) same PATs as the LTDV.

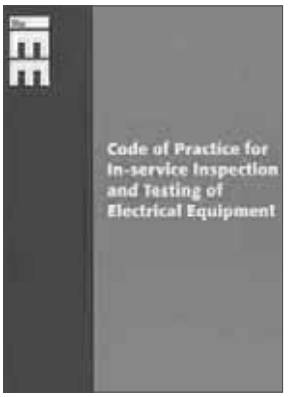
MARLTDV	£99.00
MARLTDVR	£99.00
MARLT240	£59.00
MARLT240R	£59.00

IEE Code of Practice Handbook IEEPATS2

The latest and most authoritative guidance on portable appliance testing.

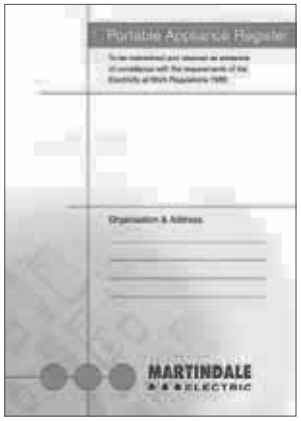
In-service testing of appliances is covered with a detailed table showing recommended test intervals for a very wide range of appliances in a variety of working environments.

We strongly recommend this Code of Practice (IEEPATS2) to anyone involved in PAT testing whether they are testing their own equipment, using a subcontractor, or selling the service of portable appliance testing.



IEEPATS2	IEE code of practice	£35.00

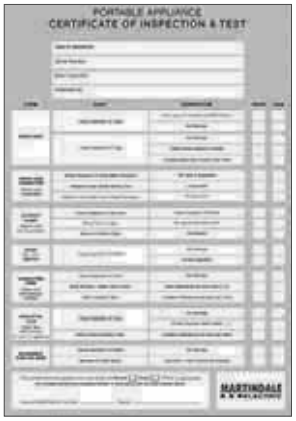
Portable Appliance Register-PATREG



This handy A5 register allows you to keep manual records of PAT testing results to ensure your system is fully compliant.

Pat Certificates-PATCERTS

A4 refill pad of 100 Portable Appliance Certificates of Test and Inspection



MARPATREG	portable appliance register	£5.99
MARPATCERTS	certificate pad	£6.99

Downloading PAT Tester Kit

The Micropat Plus Bundle includes labels, software, download lead and a barcode reader to speed up testing & prevent errors, as well as 1000 combined barcode and test labels and a packet of fail labels.

A set of 3-phase adaptors allows 3-phase equipment to be tested.

The IEE Code of Practice gives full guidance on PAT test theory and practical tips.

This kit has everything needed to start testing straight away.

MARMPAT/BUND micropat plus bundle	£1899.00

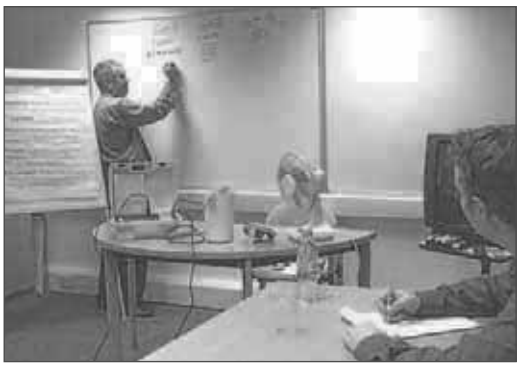
MARMPAT/BUND

CONTAINS

- Micropat + Appliance Tester
- Appliance Pass Labels (500)
- Fail Labels (100)
- Data Lead (Pat Tester - PC)
- Shire Safety First Express
- CCD Barcode Reader (Micropat)
- LTDV Ext Lead Tester
- IEE Pats Code of Practice
- Pat 3 Phase Adaptor 16A 4 Pin
- Pat 3 Phase Adaptor 16A 5 Pin
- Pat 3 Phase Adaptor 32A 4 Pin
- Pat 3 Phase Adaptor 32A 5 Pin

total value £2003.25 SAVE OVER £100

PAT Training

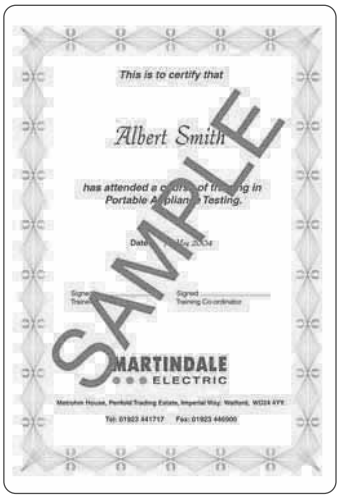


Martindale can provide on-site training for up to 12 people. This includes understanding the pat tester and how it works, practical guidance on how to test and a hands-on session where all delegates carry out PAT tests under supervision.

A Certificate of Attendance & course notes are given to all participants on successful completion of the course.

TRAINOFF	training course (customer site)	£675.00 plus travel
TRAIN	training per delegate (Martindale site)	£129.00

PATRAIN



KIT2000

IN2003 specification: see page 9

RC2000 specification: see page 10

LP2000 specification: see page 10

Includes:
TL205 mains lead
TL88 3 way fused leads
TL47 unfused test leads
batteries
aluminium case

For a full specification of each tester visit www.martindale-electric.co.uk

16th Edition/Part P Installation Kit

This kit is the ideal solution to 16th Edition testing. It contains an IN2003 250/500/1000V insulation tester, LP2000 loop and PSC tester and RC2000 RCD tester, together with TL88 3 way fused test leads and IEC mains lead.

The instruments are custom fitted into a slimline aluminium case with high density, impact resistant foam.

MARKIT2000	16th Edition/Part P installation kit	£899.00
TC2A x 3	calibration (for 3 units)	£81.00 ◆
MARTL57	fused test leads for insulation testing	£32.40

ELKIT2

MM47 specification: see page 23

CT60 specification: see page 24

Includes:
TL58 3 phase leads
TL47 unfused test leads
TT1P k-type probe

For a full specification of each tester visit www.martindale-electric.co.uk

Electrician's Kit

The Electrician's Kit contains the MM47 Electrician's multimeter, together with the CT60 clamp adaptor for AC/DC current to 600A, and a K-type thermocouple for temperature readings up to 750°C.

The robust carry case also includes a set of GS38 fused leads (TL58) for the MM47 three phase rotation function as well as a standard set of multimeter test leads.

MARELKIT2	electrician's kit	£165.00
TC2A x 2	calibration (for 2 units)	£54.00 ◆

THERMOKIT

The sensors include:
2 x TT1P bead thermocouples
1 x TT5K air Probe
1 x TT8K surface Probe
2 x TT10K pipe Clamp Probes

For a full specification of each tester visit www.martindale-electric.co.uk

Thermometry Kit

The Thermokit comprises a DT75 digital thermometer, complete with a selection of sensor types, and is housed in high density foam in a quality aluminium case.

MARTHERMOKIT	thermometry kit	£199.00
TC2A	calibration (thermometer + 1 probe)	£27.00 ◆
TC2PROBE	calibration (per extra probe)	£10.00 ◆

KIT2500

IN2103 specification: see page 7

RCD specification: see page 10

EZ2500 specification: see page 11

Includes:
TL205 mains lead
TL88 3 way fused leads
TL47 unfused test leads

For a full specification of each tester visit www.martindale-electric.co.uk

Professional 16th Edition/Part P Installation Kit

This kit is the answer for compliance with Part P.

- High spec insulation tester
- Polarisation Index & Dielectric Absorption Ratio Functions
- Earth Loop Test with quick calculation of PSC & PFC
- Hands-free PE & PN loop testing
- Effortless, rapid RCD testing
- Strong, foam lined, aluminium carry case

MARKIT2500	Profess. 16th Edition/Part P installation kit	£939.00 ●
TC2A x 3	calibration (for 3 units)	£81.00 ◆

Socket Testers

page		
37	CP501	classic check plug
37	BZ101	buzz-it check plug with sounder
38	CP201	250V industrial check plug
38	CP301	110V industrial check plug
38	PC101	3 phase industrial check plug with phase rotation
39	EZ150	non-trip earth loop impedance checker
39	EZ650	non-trip earth loop impedance checker kit

CP501

Mains supply: 200-250V(30-70Hz)

Power consumption: <1.2W

Temperature range: -10°C to 40°C 60% RH (max)

Earth leakage: <5mA

Overvoltage: CAT II/300 V

Housing: Flame retardant ABS

Dimensions: 65 x 65 x 47mm

Like all other socket testers these units cannot detect common earth and neutral or earth neutral reversal.

international

A range of Martindale international check plugs is also available, supplied with adaptors allowing use on a wide range of sockets.

For details call: +44 (0)1923 441717

Classic Check Plug

The check plug is a fast and easy way to ensure that 13A sockets are wired correctly, indicated by all three high brightness, long life, neons illuminating.

Wiring errors are indicated by one or more neons failing to light, with the pattern of lit neons indicating the type of fault. This failsafe system means that any neon not lit indicates a problem.

The unit has a virtually indestructible, flame retardant ABS case with a sculpted shape for easy removal. The plug induces less than 5mA of earth leakage, well below RCD trip thresholds.

"over 2,000,000 sold"

As with all socket testers the plug only verifies the presence of an earth, it does not assess its quality.

See page 39 for the Martindale E-Ze Check™ Xtra Earth Loop Impedance Socket Tester, which checks earth quality. Detects 14 different fault types.

MARCP511	classic check plug (pack of 10 CP501)	£119.50

BZ101

Mains supply: 200-250V, (30-70Hz)

Power consumption: <1.5W

Temperature range: -10°C to 40°C at 60%RH (max)

Earth leakage: <5mA

Overvoltage: CAT II/300 V

Housing: Flame retardant ABS

Dimensions: 65 x 65 x 47mm

Buzz-IT Check Plug with sounder

This plug is a fast and easy way to ensure 13A sockets are wired correctly in the same way as the classic check plug above. The Buzz It gives an audible signal in addition to the three neons lighting when the wiring is correct. This allows for awkwardly placed, or not easily visible, sockets to be checked quickly.

It can also be used as a basic fuse finder - when the correct fuse is pulled the buzzer stops! (For a more sophisticated fuse finder, with no hearing distance limits & no risk of pulling the wrong fuse, see pages 46 & 47). Detects 14 different fault types.

MARBZ101	buzz it check plug	£16.50

Socket Testers

250V Industrial Check Plug

For factory and industrial maintenance, the 250V Industrial Check Plug (CP201) is fitted with a standard blue 250V 16A BS 4343/IEC309 plug (round 3 pin).

Simply plug it into an appropriate socket outlet and it will instantly identify whether or not the socket is correctly wired, in the same way as the classic check plug.

MARCP201	250V industrial check plug CP201	£21.95

CP201

Operating Voltage: 250V AC

Power consumption: <1.2W

Overvoltage: CAT III/250V

Weight: 180g approx

110V CT Industrial Check Plug

Using LEDs to highlight possible fault combinations, the CP301 is invaluable for instantly checking sockets in factory or on site installations. Designed for use on 110V centre tapped circuits, it is fitted with a yellow 110V 16A CT plug to BS 4343/IEC309.

The CP301 shows similar fail-safe indications to the classic Martindale check plug (page 37).

MARCP301	110V CT industrial check plug CP301	£25.95

CP301

Operating Voltage: 110V AC (55-0-55V centre tapped only)

Operating Current: 30mA

Overvoltage: CAT II/110V

Weight: 180g approx

3 Phase Industrial Check Plug with Phase Rotation

For 3-phase socket outlets, the PC101 will instantly prove connection of all three lines (or identify which is not connected) and show the sequence of phase rotation.

Essential to ensure correct and safe running of three phase plant with motors turning in the expected direction, it is fitted with a red 16A, 3P+E, 4 pin BS 4343/IEC309 plug.

MARPC101	3 phase industrial check plug & phase rotation	£54.50

PC101

Voltage range (phase to phase): 100V to 600V (peak)(40Hz to 60Hz)

Power consumption: <2.3W

Temperature range: -10°C to 40°C at max 60% RH

Overvoltage: CAT III/600V

Weight: 180g approx

EZ150

Nominal supply: 230V, 50 Hz

Earth loop impedance span: 0-1.7Ω, 1.7 to 5Ω, 5 to 10Ω, 10 to 100Ω, 100 to 200Ω, 200 to 500Ω

Earth loop threshold accuracy: ±(10% + 0.3Ω)

Voltage low indication: <195V

Voltage high indication: >270V

Open earth indication: >500Ω

Power consumption: <1.6 W

Overvoltage: CAT II/300 V

Dimensions: 65 x 65 x 50mm

Weight: 64g approx

Like all other indicators this unit cannot detect common earth and neutral or earth neutral reversal.

E-Ze Check Xtra™ Earth Loop Impedance Indicator

This is the first socket tester that gives a measurement of the earth loop impedance. This is the only safe solution for socket testing, as other testers can indicate as “safe” a socket with a dangerously high earth resistance.

Conventional indicators have the weakness that they only tell if the earth is connected, they don’t indicate how safe it is.

Martindale’s new T-Safe™ Technology gives safe, earth loop impedance checking within carefully selected bands, without tripping the RCDs.

- Non-trip earth loop test
- Voltage test
- Socket test for open termination and correct wires
- T-Safe™ technology
- Identifies faults other checkers can’t
- Patented technology

“ideal for quick safety checks”

MAREZ150	non-trip earth loop impedance indicator	£55.20

EZ650

EZ150 Specification: see above

TL88 Specification: see page 63

Includes: mains lead (EX332 13A) & 3 way fused leads (TL88)

E-Ze Check Xtra™ Professional kit

The E-Ze Check™ Pro Kit has an IEC socket with an interchangeable 3 pin adaptor and TL88 3 way fused leads with croc clips.

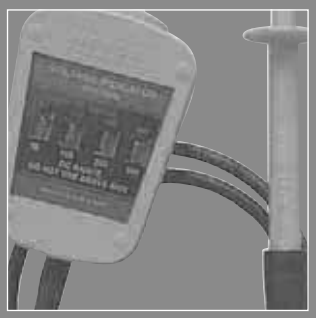
This allows testing at light fittings, distribution boards and terminals using the same technology as the E-Ze Check™ described above.

The kit is contained in a custom designed lightweight protective plastic case complete with carry handle.

- Everything needed for socket testing in one kit
- Comes in a robust, easy to carry case

MAREZ650	non-trip earth loop impedance indicator kit	£99.60

Voltage Indication



page

41	VI13700G	safety voltage indicator
41	PD690	proving unit
42	TEK100	non-contact voltage indicator
42	TEK200	non-contact voltage & magnetic pole indicator

See pages 60 & 61 for Drummond test lamps

VI13700G

Voltage Ranges:

AC	0 - 49V none lit
	50 - 99V one lit
	100 - 199V two lit
	200 - 399V three lit
	400V+ all it
DC	0 - 74V none lit
	75 - 149V one lit
	150 - 239V two lit
	240 - 559V three lit
	560V+ all lit

Operating temperature:
-20°C to 50°C

Overvoltage: CAT III/600V

IMPORTANT:
Voltage indicators should always be tested with a proving unit or known live source before and after use - see PD690 below

Safety Voltage Indicator

Before doing any electrical work it is essential to be absolutely certain the circuit is dead. This GS38 compliant voltage indicator rapidly and safely checks for AC and DC voltages from 50V to 600V. The bright, long life neon indicators give clear and immediate display of the voltage level range.

The tough, moulded case construction combined with heavy duty, double insulated leads which terminate in a lockable and retractable prod sheath and a substantial finger guard, make this a very reliable and safe instrument.

The return lead incorporates an HRC fuse which, together with the retractable test prods, ensures that the unit fully meets all the GS38, M15/4, HSE and EN61010 recommendations.

Widely specified by training organisations, utilities and large contractors.

MARVI13700G	safety voltage indicator	£39.80
TC2A	calibration	£27.00

"essential safety aid, everyone should use it"

PD690

Output Voltage:
230V into a 5kΩ load
700V into a 700kΩ load

Output Loading: > 4kΩ

Operating Temperature: -10 to 40°C at max. 70% RH

Batteries: 6 x LR6 (MN1500) 1.5V Alkaline batteries or equivalent (not included)

Dimensions: 143 x 84 x 50mm

Weight: 270g approx (excl batteries)

Proving Unit

Nothing is more dangerous than trusting a defective voltage indicator.

The proving unit produces 690V AC/DC to enable voltage indicators to be fully checked.

This unit is designed for indicators with 230V and 415/440V AC or DC detection ranges, such as the Martindale VI13700G.

The proving unit is one of the few designs to check indicators with ranges above 250V.

The PD690 can also check Drummond and other filament test lamps as its output is sufficient to illuminate the bulb.

Remember, always prove your voltage indicator is working before you touch a circuit you think is dead.

Not designed for use with multimeters.

MARPD690	proving unit	£79.85
TC2A	calibration	£27.00
MARTC57	carry case for PD690 & VI13700G	£17.50

Voltage Indication

Non-Contact Voltage Indicator

This is suitable for detecting 100V to 600V AC without requiring physical contact with the conductor.

The presence of any voltage between 100V and 600V AC will generate an audible tone, together with a red visual indication.

The integral self test activates the sensor in the tip of the tester at 50Hz as well as checking the battery and LED.

The entire circuit, not just the indicator LED is therefore tested.

This proves that the unit is fully functional and avoids the need for a separate proving unit.

MARTEK100	non-contact voltage indicator	£27.30
TC2A	calibration	£27.00

TEK100

Voltage Range: 100 to 600V AC.

Frequency Range: 50Hz to 50kHz.

Integrated self test proving function

Sensitivity: Registers at 3mm for 100V, 50Hz, 23mm for 240V, 50Hz (distances are from the tip of the unit to a flat PVC twin core and earth cable suspended in free space)

Indication:
Visual: Red LED
Audible: 2kHz tone
Battery low: Green LED goes out

Operating temperature: 0°C to 50°C

Supply: 9V alkaline battery, MN1604 or equivalent (excluded)

Housing: Flame retardant ABS

Dimensions: 202 x 32 x 22mm

Weight: 140g approx (excl battery)

Non-Contact Voltage & Magnetic Indicator

This detects the presence and polarity of magnetic fields produced by indicators, relays, solenoids and transformers.

The integral self-test activates the sensor in the tip of the tester at 50Hz as well as checking the battery and LED. This proves that the unit is fully functional and avoids the need for a separate proving unit.

In addition, this unit incorporates all the capability of the TEK100 voltage indicator detailed above, producing a versatile instrument in a slim and ergonomic ABS housing.

MARTEK200	non-contact voltage & magnetic indicator	£39.80
TC2A	calibration	£27.00

TEK200

Voltage range: 100 - 600V, 50Hz to 50kHz

Self test proving function

Sensitivity: Registers at 3mm for 100V, 50Hz, 23mm for 240V, 50Hz (distances are from the tip of the unit to a flat PVC twin core and earth cable suspended in free space)

Indication:
Visual: Red LED
Audible: 2kHz tone
Battery low: Green LED goes out

Magnetic field range: ±10mT, 0 - 50kHz

Magnetic indication:
North pole: Red LED
South pole: Green LED

Operating temperature:
-5°C to 40°C

Supply: 9V alkaline battery, MN1604 or equivalent (excluded)

Housing: Flame retardant ABS

Dimensions: 202 x 32 x 22mm

Weight: 150g approx

TEK402

Probe Voltage: 9V

Test Current: 5mA

Resolution Range: 0 - 170kΩ audible

Output: 85dB minimum at 30cm, zero resistance

Audible Frequency: 2.8kHz ± 0.1kHz

Supply: 9V, MN1604/PP3 alkaline battery (excluded)

Dimensions: 150 x 64 x 30mm

Weight: 185g approx (incl leads, excl battery)

Includes: unfused leads (TL49) with croc clips

Continuity Tester with Audible Indication

This is a low cost, easy to use continuity tester with audible indication. The loud buzzer makes it easy to use in noisy environments.

Its simplicity and tough construction gives fast and simple continuity testing at a low cost.

Suitable for a wide variety of low voltage signalling, process control and educational applications.

MARTEK402	continuity tester with audible indication	£26.75

TEK404

Probe Voltage: 9V

Test Current: 5mA

Resolution Range: 0 - 170kΩ audible, 0 - 8kΩ visual

Output: 85dB minimum at 30cm, zero resistance

Red LED illuminates: below 8kΩ

Audible Frequency: 2.8kHz ± 0.1kHz

Internal fused safety cutout protects to 250V AC/DC

Supply: 9V, MN1604/PP3 alkaline battery (excluded)

Dimensions: 150 x 64 x 30mm

Weight: 185g approx (incl leads, excl battery)

Includes: unfused leads (TL49) with croc clips

Continuity Tester with Audible & Visual Indication

This is a low cost, easy to use continuity tester. It has audible and visual indication plus overvoltage protection. It has the same loud buzzer as the TEK402, giving a very clear signal of continuity.

With all the benefits of the TEK402 above, this unit adds visual indication by an LED and, as a safety measure in case the unit is accidently used on live circuits, fused safety protection.

MARTEK404	continuity tester + audible + visual indication	£29.80

Phase Rotation

Phase Rotation & Continuity Indicator

This continuity indicator will quickly and simply prove continuity of all three lines, (or identify which are faulty) and shows the sequence of phase rotation.

It gives a fast, effective method of identifying worn or unmarked cables, and ensures 3-phase outlets and machines are wired correctly.

The retractable GS38 probe shields give a choice between long exposed tips for reaching inaccessible contacts and safer, shorter lengths for increased safety.

- Proves continuity
- Identifies faulty lines
- Shows direction of phase rotation

See page 38 for phase rotation testing on industrial 3 phase sockets

MARPC15250	phase rotation & continuity indicator	£73.50
TC2A	calibration	£27.00

PC15250

For use on systems from 100V to 600V phase to phase, 40Hz to 60Hz.

Operating temperature: -20°C to 50°C

Overvoltage: CAT III/600V

Complies with: GS38 and BS EN 61010

Dimensions: 230 x 140 x 80mm

Weight: 354g approx

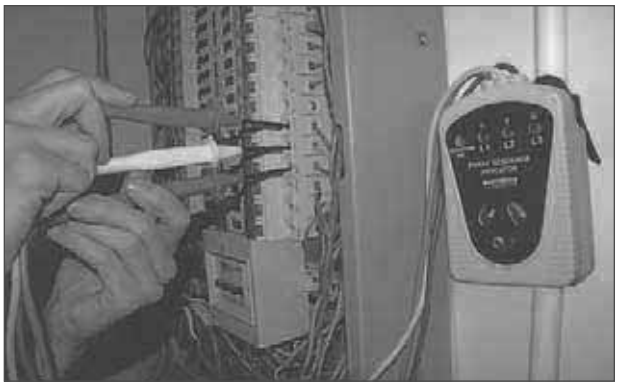
Includes: one fused crocodile clip & two fused prods with retractable shrouds

Phase Sequence Indicator

A velcro strap allows the unit to be attached to conduits etc. which leaves your hands free to use the test leads. The PSI3000 with clockwise rotation disc is illustrated – for anti-clockwise indication of correct rotation specify the PSI3300.

The Martindale PSI3000 is the ultimate phase sequence (rotation) indicator. It combines an easy to follow rotating disc with fault indicators showing if any of the phases are down.

The disc continues to rotate after disconnection, giving more time to identify the phase sequence.



MARPSI3000	phase sequence indicator (clockwise)	£119.00
MARPSI3300	phase sequence indicator (anti-clockwise)	£119.00
TC2A	calibration	£27.00
MARTC68	carry case	£12.95

PSI3000 & PSI3300

For use on systems from 100V to 600V phase to phase, 40Hz to 60Hz.

Neon indication from 100V phase to phase (RMS)

Rotating disc operation from 200V phase to phase (RMS):
Clockwise - PSI3000
Anti-clockwise - PSI3300

Fitted with GS38 fused prods with 1M leads: 3 colour coded croc clips are included.

Operating Temp: - 20°C to 40°C

Overvoltage: CAT III/600V

Overvoltage: CAT IV 300V

Complies With: GS38 and BS EN 61010

Includes: 3 easy to fit crocodile clips

"simple visual indication."

TEK903

Resistance:
1% Grade 0.6W per resistor

variable from 10Ω to 11.1111MΩ ±1% in 6 ranges

Dimensions: 306 x 70 x 80mm

Weight: 404g approx

Decade Resistance Box

This is a very reliable decade resistance box with high quality rotary switches providing in-line readouts.

Ideal for laboratory, educational and calibration applications.

The extra terminal forms an accurate potential divider.

MARTEK903	decade resistance box	£119.00
TC2C	calibration	£55.00

◆

TEK905

Capacitance: ±5% Grade 100 V DC

variable from 100pF to 4.111µF± 5% in 5 ranges

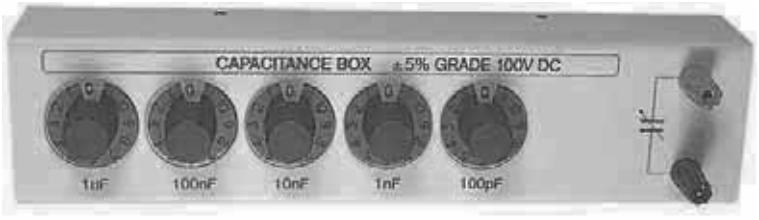
Dimensions: 306 x 70 x 80mm

Weight: 425g approx

Decade Capacitance Box

This is a 5 decade capacitance box giving a useful range of capacitance values.

Ideal for laboratory, educational and calibration applications.



MARTEK905	decade capacitance box	£145.00
TC2C	calibration	£55.00

◆

Fuse Finders

Standard Fuse Finder Kit - FD500

"never pull the wrong fuse again"

The analogue Martindale Fuse Finder Kit (FD500) finds which fuse or breaker controls a circuit. It also enables tracing from socket to socket on a circuit.

The transmitter (FD500/T) takes its power from the mains and emits a signal which the adjustable sensitivity receiver (FD500/R) can pick up.

This combination can easily distinguish the appropriate circuit, even on a crowded fuse board.

Sensitive analogue adjustment by thumb wheel finds the right breaker rapidly.

MARFD500	standard fuse finder kit	£49.65	●
TC2A	calibration	£27.00	◆

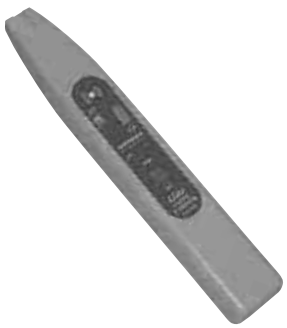
Professional Fuse Finder Kit - FD600

The transmitter in the Professional Fuse Finder Kit (FD600) has an IEC socket with a standard UK 3 pin mains adaptor (EX332), which extends the use to include both 13A sockets, and with the TL83 lead, to light fittings or other points in a circuit where there is no power socket.

Allows you to trace from one distribution board to another or to work on lighting circuits.

MARFD600	professional fuse finder kit	£89.00	●
TC2A	calibration	£27.00	◆
MARFD600/UP	upgrade from standard kit to professional kit	£59.75	

Elite Receiver Upgrade - FD650R



Upgrade from the Standard Fuse Finder kit to the Elite version, giving microprocessor control and a choice of manual or automatic modes.

MARFD650R	elite receiver upgrade	£48.50

FD500 & FD600

Transmitter

Mains supply: 230V, 30 - 70 Hz

Transmit Signal: approx 5Hz; 20A (max) pulse of 1.7µS width

Temperature range: -10°C to 40°C at max 60% RH

Earth Leakage: Nil

Power consumption: Approx 1W

Overvoltage: CAT III/300V

Protection Class: IP20

Dimensions: 65 x 65 x 46mm approx

Weight: 60g (FD500/T) 65g (FD600/T) 65g

Receiver

Tracing depth: 0 - 10cm, for fuse assignment (depending on local conditions)

Sensitivity control: Rotary thumbwheel on the housing

Temperature range: -10°C to 40°C at max 60% RH

Protection class: IP20

Supply: 9V battery, MN1604/PP3, IEC 6LA61 (alkaline only) (excluded)

Dimensions: 160 x 55 x 30mm

Weight:135g approx (incl battery)

Units are EMC compliant

FD550 & FD650

Transmitter

Voltage rating: 230V

Frequency range: 50-60Hz

Switching frequency: approx. 5Hz

Transmission pulse width: approx.1.7µS

Transmission pulse amplitude: 20A max

Earth Leakage: Nil

Power consumption: Approx. 1W

Protection Class: IP20

Overvoltage: CAT III/300V

Supply: From mains

Dimensions: 65 x 65 x 46mm approx

Weight: 65g approx

Receiver

Tracing depth for fuse assignment: approx. 0 - 10cm, depending on local conditions

Sensitivity setting: via on/off potentiometer

Protection class: IP20

Supply: 9V battery, MN1604/PP3, IEC 6LA61 (alkaline only) (excluded)

Dimensions: 202 x 32 x 22mm

Weight: 150g approx (excl battery)

Units are EMC compliant

FD550 includes:

FD650/R receiver

FD500/T transmitter

FD650 kit includes:

FD650/R receiver

FD600/T multi-purpose transmitter

IEC 13A mains lead adaptor

TL83 2 wire fused leads with IEC connector

Includes: custom carry case

Elite Fuse Finder - FD550

The Digital Elite Fuse Finder brings microprocessor controlled multi-level sensitivity to fuse and breaker identification.

A 6 segment bargraph gives progressive indication of signal strength allowing even faster identification. In addition, the Elite Fuse Finder also includes a non contact voltage indicator.

The Elite Fuse Finder can operate in two modes:

Automatic mode:
which has a memory and auto adjusting of sensitivity for foolproof identification.

Manual mode:
which allows very rapid fuse finding using the bargraph.

- Microprocessor Controlled
- 6 Segment Bargraph
- Non Contact Voltage Indicator
- Manual and Auto Modes

This unit is designed for use at mains sockets only.

MARFD550	elite fuse finder	£59.65

Elite Professional Fuse Finder Kit - FD650

The FD650 is the multipurpose version of the popular digital fuse finder above.

Supplied in a robust case complete with transmitter (FD600/T) and receiver (FD650/R), it is capable of operating with either the 13A plug top lead (EX332) for sockets, or the TL83 lead for light fittings or other points in a circuit without standard 13A power sockets.

MARFD650	elite professional fuse finder kit	£99.00

Thermometry

page		
49	DT75	dual input thermometer
49	THERMOKIT	thermometry kit
50	TT1P & TT1KF	thermocouples
50	TT5K	air probe
50	TT8K	surface probe
50	TT10K	pipe clamp
50	TT4K & TT4KSP	high temperature probes
50	TT6K & TT6T	penetration probe
51	TT8KHD	heavy duty surface probe
51	TT9K	needle probe
51	TT12K	velcro probe
51	TT14K	oven probe
51	TT15K	heavy duty needle probe
51	TT18	between pack probe
51	TT20K	binder probe

DT75

Display: 3½ digit liquid crystal display (LCD) with a maximum reading of 1999.

Sampling Rate: 3 times per second

Supplied Probe: 4-foot type "K" thermocouple bead probe (teflon tape insulated). Maximum insulation temperature 260°C (500°F). Probe accuracy ±2.2°C or ±0.75% of reading (which ever is greater) from 0°- 800°C.

Resolution: 1°C or 1°F (or 0.1°C or 0.1°F) user-selectable.

Measurement Range: -50°C to 1300°C (-58°F to 2000°F).

Meter Operating Range: For use in 0°C to 50°C environment (32°F to 122°F).

Accuracy: * (18°C to 28°C ambient) ±(0.3% rdg +1°C)-50°C to 1000°C ±(0.5% rdg +1°C)1000°C to 1300°C ±(0.3% rdg + 2°F)-58°F to 2000°F

Supply: Standard 9V battery (NEDA 1604, IEC 6F22)

Dimensions: 147 x 70 x 39mm
Weight: 215g approx
Includes: two K-type bead thermocouples, protective holster, battery & manual

Digital Thermometer

This is a high quality dual-input digital thermometer with temperature difference capability. It is able to measure input and output temperature and temperature differentials through boilers, radiators etc. and can accept a wide range of K type probe accessories.

The meter comes with a protective rubberised holster and is switchable between °C and °F and between 1° and 0.1° resolution. Hold and maximum buttons allow the current value to be frozen or the maximum reading to be stored.

See pages 50 & 51 for a wide range of compatible K type probes.

MARDT75	dual Input thermometer	£74.50
TC2A	calibration	£27.00
TC2PROBE	calibration (per extra probe)	£10.00

**The accuracy specification does not include type K thermocouple probe accuracy.*

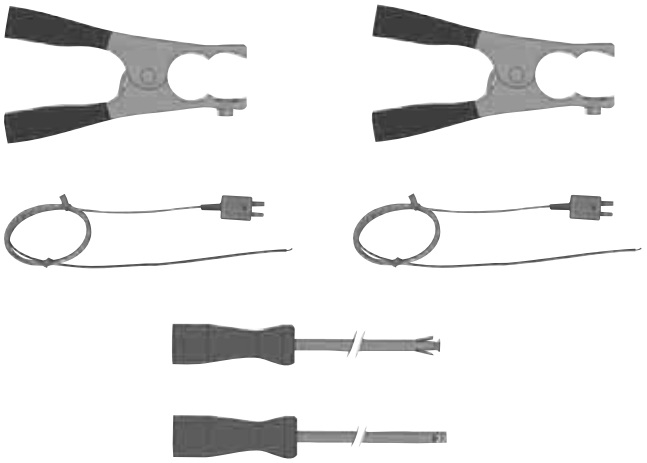
THERMOKIT

The sensors include:
2 x TT1P bead thermocouples
1 x TT5K Air Probe
1 x TT8K Surface Probe
2 x TT10K Pipe Clamp Probes

"everything you need in one case"

Thermometry Kit

The Thermokit includes a DT75 digital thermometer, complete with a selection of sensor types, and is housed in high density foam in a high quality aluminium case.



MARTHERMOKIT	thermometry kit	£199.00
TC2A	calibration (thermometer & 1 probe)	£27.00
TC2PROBE	calibration (per extra probe)	£10.00

Thermocouples TT1P & TT1KF

The TT1P is a flexible general purpose bead K-Type thermocouple, PTFE insulated cable with mini plug.

The TT1KF is a simple general purpose bead K-Type thermocouple, fibreglass insulated cable with mini plug.

MARTT1P	thermocouple PTFE insulation	£6.75
MARTT1KF	thermocouple fibreglass insulation	£8.75

TT1P & TT1KF

TT1P
Temperature Range: -75 to 250°C

Dimensions: Ø1.5 x 1000mm

TT1KF
Temperature Range: -75 to 350°C

Dimensions: Ø1.5 x 1000mm

Sensor lengths can be extended by using a 3 metre extension lead (MARTTKEXT- £16.95)

Air Probe TT5K

Specially designed for measuring the temperature of air, e.g. in heating or air conditioning ducts. A very sensitive, high quality sensor which responds more rapidly than a general purpose probe.

MARTT5K	air probe	£28.50

TT5K

Temperature Range: -50 to 250°C

Dimensions: Ø4.5 x 130mm

Surface Probe TT8K

Surface probe with spring loaded sensing tip. Suitable for a variety of industrial applications as well as heating & ventilation.

MARTT8K	surface probe	£34.75

TT8K

Temperature Range: -50 to 600°C

Dimensions: Ø6 x 130mm

Pipe Clamp TT10K

Ideal for measuring boiler flow and return temperatures.

MARTT10K	pipe clamp	£24.50

TT10K

Measures the temperature of pipes in refrigeration and H&V systems. The sensor is in the clamp jaw which fits around the pipe.

Temperature Range: -50 to 100°C

Dimensions: Maximum Ø30mm

High Temperature Probe TT4K

These mineral insulated probes are ideal for measuring temperatures up to 1100°C. They can be easily bent without affecting their performance.

MARTT4K	high temperature probe	£32.75
MARTT4KSP	with 1m length probe	£49.50

TT4K & TT4KSP

TT4K
Temperature range: -50 to 1100°C

Dimensions: Ø3 x 130mm

TT4KSP
Temperature range: -50 to 1100°C

Dimensions: Ø3 x 1000mm

Penetration Probe TT6K

TT6K penetration probe is strong and versatile and is suitable for liquids and semi-solids.

MARTT6K	penetration probe	£29.50
MARTT6T	for use with food thermometers	£29.50

TT6K TT6T

TT6K
Temperature range: -50 to 250°C

Dimensions: Ø3.3 x 130mm

TT6T
Temperature range: -50 to 250°C

Dimensions: Ø3.3 x 130mm

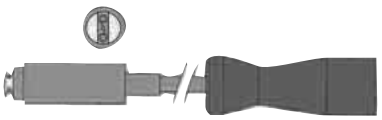
TT8KHD

Temperature range: -50 to 1000°C

Dimensions: Ø12 x 130mm

Heavy Duty Surface Probe TT8KHD

This heavy duty surface probe is suitable for measuring a variety of surface temperatures.



MARTT8KHD	heavy duty surface probe	£39.50

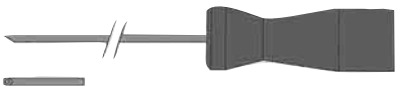
TT9K

Temperature range: -50 to 250°C

Dimensions: Ø1.8 x 130mm

Needle Probe TT9K

This handheld needle probe is ideal for penetrating soft materials. Suitable for a variety of industrial applications.



MARTT9K	needle probe	£29.50

TT12K

Temperature range: -50 to 100°C

Dimensions: 20 x 500mm

Velcro Probe TT12K

A sensor is built into the wrap around velcro. Ideal for measuring temperatures of large pipes or other objects where attaching a conventional probe would be difficult.

MARTT12K	velcro probe	£29.50

TT14K

Temperature range: -50 to 250°C

Dimensions: Ø3.3 x 130mm

Oven Probe TT14K

The oven probe incorporates a stainless steel handle & probe with 2m of PTFE high temperature cable.

MARTT14K	oven probe	£47.75

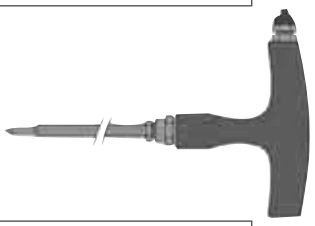
TT15K

Temperature range: -50 to 250°C

Dimensions: Ø8 x 500mm

Heavy Duty Needle Probe TT15K

The heavy duty needle probe incorporates a robust T-shaped handle, specifically designed for heavy duty applications in the construction and building industries.



MARTT15K	heavy duty needle probe	£45.60

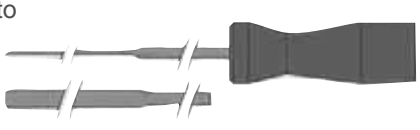
TT18K

Temperature range: -50 to 250°C

Dimensions: Ø4.5 x 130mm

Between Pack Probe TT18K

The “Between Pack” probe has been designed to measure between packets or boxes of produce.



MARTT18K	between pack probe	£45.60

TT20K

Temperature range: -50 to 250°C

Dimensions: Ø3.3 x 130mm

Binder Probe TT20K

This is a strong and versatile probe, suitable for insertion into “Binder” self sealing rubber glands. A must for building service engineers.

MARTT20K	binder probe	£34.75

Environmental

page		
53	TEK500	microwave leakage detector
53	CO90	carbon monoxide meter
54	SP75	sound level meter
54	LM90/92	light meters
55	IR90	infrared and k-type thermometer
55	IR88	infrared gun-type thermometer
55	AV90	anemometer with external probe
56	TEK300	process control calibrator
56	TEK600	cable and pipe detector

TEK500

Detection frequency range: 2450MHz ± 25MHz

Sensor distance: The fixed cone on the rear of the unit should be in gentle contact for the standard 50mm separation.

Indicators: Test position: All four LEDs should light and an audible tone will be emitted.

On position:
Pass: Green "sys" LED only (<1mW per cm²)

Green "sys" LED & yellow "1mW" LED (<5mW per cm²)

Fail: Red "5mW" LED (>5mW per cm²), audible tone

Red "10mW" LED (>10mW per cm²), audible tone

Supply: 9V alkaline battery, MN1604 or equivalent (excluded)

Dimensions: 150 x 64 x 30mm

Weight: 170g approx

Includes: Thermometer, water beaker, carry case & manual

Microwave Leakage Detector

An easy to use, low cost pass/fail microwave leakage detector suitable for commercial and domestic microwave ovens. It is designed to comply with national standards on permitted exposure levels.

The TEK500 includes a self test which simulates a real microwave input to ensure the unit is working correctly at all times.

This meter can test microwave ovens for potentially dangerous leaks with the accessories supplied.

Using the measuring beaker and thermometer supplied, microwave power output may be assessed.

Indicates at 1, 5, 10mW/cm². Tests to BS 5175.

MARTEK500	microwave leakage detector	£148.50
TC2B	calibration	£39.00 ◆
MARMICRO	microwave test labels (500)	£35.00 ●

CO90

Display: 3 ½ digit liquid crystal display (LCD) with maximum reading of 1999 ppm

Low battery indication

Operating Environment: 0°C to 40°C (32°F to 105°F) at 15% to 90% relative humidity

Storage Temperature: -20°C to 60°C (-4°F to 140°F), 0 to 80% R.H. with battery removed from meter

Response Time:
<70 sec to 90% of reading

Initial Accuracy:
± 5% of reading ± 5ppm

Average Measurement Capacity:
(A reading is taken every 7 seconds and displays the average on screen)

Normal Measurement Capacity:
(current reading shown on screen)

Supply: Standard 9V battery (PP3, NEDA 1604, IEC 6F22 006P)

Dimensions: 189 x 67 x 35mm

Weight: 193g approx incl battery

Carbon Monoxide Meter

This rapid responding carbon monoxide meter is ideal for checking safety.

A beeper gives audible indication, speeding up with CO concentration, and becoming a continuous tone above 200 ppm.

Max and Hold buttons allow one reading (or the highest) to be displayed over a period of time.

MARCO90	carbon monoxide meter	£119.00
TC2C	calibration	£55.00 ◆

Sound Level Meter

This compact sound level meter can be used one handed or it can be mounted on a tripod for measuring over long periods.

The Time Weighting can be set to Slow (for normal use) or Fast to check the average level of frequency noise.

Similarly the Frequency Weighting can be A or C with C suitable for low frequency noise. An AC/DC output allows capture of reading for later analysis (output is approx 10mV DC/dB).

This unit is designed to give low cost assessment of noise levels and not designed for professional safety certification.

MARSP75	sound level meter	£89.00
TC2C	calibration	£55.00

SP75

Applicable Standard:
IEC 651-1979 Type 2, ANSI S1.4-1983 Type 2, JIS C 1502

Measurement Range: Lo - range 35-90 dB, Hi - range 75-130 dB
Measurement rate: once per sec, nominal

Display: 3½ digit LCD
Resolution: 0.1dB

Frequency Weighting: A and C
Frequency Range: 31.5Hz-8000Hz

Detector: True-RMS with independent frequency weightings

Dynamic Range: 55dB

Maximum Hold decay time: <1dB/3minute with Reset switch

Time Weighting: (S) SLOW and (F) FAST according to IEC 651 Type 2

Microphone: ½" electret (prepolarised) condenser

Supply: 4 x 1.5V batteries (AAA size) UM-4 R03
Dimensions: 217 x 44 x 40mm
Weight: 168g approx (incl batteries)

Includes: windscreen, 4 batteries, tripod mounting screw-nut & protective carrying case

Light Meters

LM92 illustrated

Two versions are available:
LM90: 20 lux to 20k lux
LM92: 200 lux to 200k lux
(more sensitive in higher ranges)

These low cost light meters resolve down to .01 lux, making them appropriate for use in very low light applications such as certifying emergency lighting.

The handbook gives details of conversion factors for different light wavelengths allowing more accurate measurements.

Peak Hold & Hold allow a maximum reading to be recorded or one particular result to be kept. Results can be shown in lux or foot candles.

MARLM90	light meter (0.01-20k lux)	£99.00
MARLM92	light meter (0.1-200k lux)	£89.00
TC2C	calibration	£55.00

LM90/LM92

LM90 Ranges:
20lux, 200lux, 2000lux, 20klux
20fc, 200fc, 2000fc, 20kfc

LM92 Ranges:
200lux, 2000lux, 20klux, 200klux
200fc, 2000fc, 20kfc, 200kfc

Resolution: 0.1lux, 0.1fc

Spectral response: CIE photopic

Total accuracy for CIE standard illuminant A (2856K):
± (3%rdg + 10dgts)

Supply: 9V battery (NEDA 1604, IEC 6F22 006P)

Dimensions: 190 x 65.5 x 35mm

Weight: 210g approx (incl battery)

Includes: battery and manual

The LM90 is preferred for emergency lighting applications; the LM92 is more sensitive at higher lux levels.

Photometric Formulas:
10.764 foot candles=lux
(lumens/meter²)
0.0929 lux=foot candles
(lumens/ft²)

IR88

Range:
-30°C to 550°C/-22°F to 1022°F

Resolution:
0.5°C/1°C (AUTO), 1°F

Accuracy:
±(2°C/4°F) for -30°C to 100C,
-22°F to 212°F

±(2% of reading) for 101°C to 550°C, 213°F to 1022°F

Response TIme: 0.25 second

Supply: 9V battery (PP3, NEDA 1604, IEC 6F22006P)

Dimensions: 148 x 105 x 42mm

Weight: 157g approx

Infrared Gun-Type Thermometer

This pistol style infrared thermometer has a laser marker to ensure accurate spot measurement. The display can show temperatures in Fahrenheit or Celsius.

A limit function sets upper and lower temperature thresholds and a tone alerts if the limits are exceeded.

An optional auto power off feature can conserve battery life.

Adjustable emissivity from 0.1-1.0.

MARIR88	infrared gun-type thermometer	£49.50
TC2B	calibration	£39.00

IR90

Range:
-20°C to 550°C/-4°F to 1022°F

Resolution:
0.5°C/1°C (AUTO), 1°F
Accuracy:
±2% of reading or ±3°C/6°F, whichever is greater

Response TIme: 1 second
Emissivity: 0.10 to 1.00 by steps of 0.01

K-TYPE -200°C to 1372°C, -328°F to 1999°F
± (0.1%rdg + 1°C) at -50°C to 1372°C
± (0.1%rdg + 2°C) at -50°C to -200°C
± (0.1%rdg + 2°C) at -58°F to 1999°F
± (0.1%rdg + 4°C) at -58°F to -328°F

Supply: 9 volt battery (PP3, NEDA 1604, IEC 6F22)
Dimensions: 170 x 65.5 x 35mm

Weight: 195g approx

Infrared & K-Type Thermometer

This thermometer has a laser marker to ensure accurate spot measurement. The display can show temperatures in Fahrenheit or Celsius. A limit function sets upper and lower temperature thresholds and a tone alerts if the limits are exceeded. An optional auto power off feature can conserve battery life.

A K Type thermocouple (see pages 50 and 51) can also be used with a variety of probes to take contact temperature readings. In addition the emissivity is variable, to allow for a wide range of source types.

MARIR90	infrared K-type thermometer	£69.50
TC2C	calibration	£55.00

AV90

Measurement range:
-20°C to 60°C/-4°F to 140°F

Resolution: 0.1°C/°F

Accuracy:
±1.0°C at - 20°C to 0°C, 45°C-60°C
±0.5°C at - 0°C to 45°C
±2.0°C at - 4°C to 32°C,113°C-140°C
±1.0°C at - 32°C to 113°C

Wind Velocity:

Units		Resolutions
0.3-30	m/s	0.01
60-5900	ft/min	1
0.6-58	knots	0.1
0.7-67	mph	0.1
1.1-108	km/h	0.1

Supply: 9V battery (PP3, NEDA 1604, IEC 6F22 006P)
Dimensions: 770 x 65.5 x 35mm
Weight: 390g approx

Anemometer with External Probe

This meter displays temperature (C or F) and airflow at the same time. Maximum and minimum figures for flow and temperature can be shown. For more accurate measurements, up to 8 readings can be taken and automatically averaged.

In addition, measurements can be taken over either 2 or 16 seconds with the average of 2 or 16 readings being displayed.

Airflow measurement can be displayed as: metres/second, feet/minute, knots, mph or kph.

MARAV90	anemometer with external probe	£129.00
TC2C	calibration	£55.00

Process Control Current Calibrator

This Martindale current calibrator has sink, source and monitor modes for 0 to 20mA.

It is ideal for most process control as well as general purpose, signal injection applications.

This handheld, fully portable unit has a 3½ digit display with overload protection for additional safety.

MARTEK300	current calibrator	£229.00
TC2B	calibration	£39.00

TEK300

DC/DC Converter Output: 28.5V (+0.1V)

Current Range: 0 - 20mA F.S. (+0.1%)

Resolution: 10µA

Temperature Drift: 150ppm/°C

Linearity: +0.15%

Output Noise (typically): 4mV p/p

Indicators:
LED (green) - battery OK
LED (red) - output error

Display: 3½ digit LCD

Output Connectors: 4mm terminal posts (19.05mm apart)

Operating Temperature: 0 - 50°C

Supply: 2 x 9V alkaline batteries, MN1604 or equivalent (excluded)

Housing: Light grey ABS handheld, supplied with stand

Dimensions: 180 x 100 x 44mm

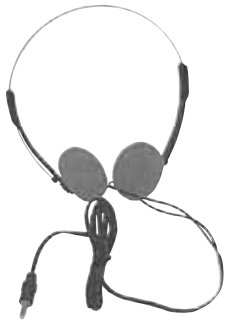
Weight: 380g approx

Cable & Pipe Detector

Reliably locates live or dead cables through a variety of building aggregates and sub-surfaces. This unit uses both visual indication and an audible tone to pin point cables at a depth of up to 25mm* with a high degree of accuracy.

It can even locate cables in close proximity to ferrous and non ferrous metal frameworks - an application not previously available with conventional units. Headphones are supplied for use where background noise is excessive to increase the real world sensitivity of the unit.

* Depth of detection may vary dependant on cable type.



"headphones really help isolate where the cables are"

MARTEK600	cable & pipe detector	£69.50

TEK600

Indicators: audible tone and visual indication

Detection Depth: 0 - 25mm

Operating Temperature: -5 to 40°C

Supply: MN1604 battery

Housing: Robust ABS

Dimensions: 150 x 64 x 30mm

Weight: 190g approx

Includes: headphones

Calibration and Service

Martindale offers a full and comprehensive calibration and repair service for Martindale and most other manufacturers' equipment.

Calibration prices are competitive and are quoted alongside each product in the catalogue. Turnaround times vary but instruments are usually returned within 5 working days.

Calibration & Service

All Martindale instruments are supplied calibrated, but personalised certificates are chargeable.

We use computer driven procedures to ensure a consistent, repeatable approach.

Centralised records also allow us to maintain traceability and to generate reminders for re-calibration when next due.

Additionally we offer calibration across a wide range of electrical test equipment from other manufacturers.

FAST 24 hour calibration allows you to drop your meters off at our premises and collect them the next day, for an additional 50% per unit. Alternatively, send the units to us and we will return them on a next day carrier.

We also offer a collection service using a next day carrier where we arrange pick up and delivery of your meters for £7.50 per box each way, or free of charge for five or more units.

Ask your nearest wholesaler for details of local calibration days.

A full repair service is also available on all Martindale products plus many other makes of instruments across a broad range of product types.

Please call our service department on 01923 650660 for further information on any of these services.

Martindale's verification service conforms to the requirements of BS 5781/ BS EN 30012-1, is certified to ISO 9001: 2000 and is traceable to national standards via UKAS (NAMAS) certificates held for our calibration equipment.

SPECIAL TERMS APPLY

INSULATION TESTERS	TYPE	PRICE
Martindale	IN2001/IN2003	£27.00
	IN2101/IN2103	£27.00
Metrohm	16 Series	£27.00
	7A	£27.00
Other similar		£27.00
RCD TESTERS		
Martindale	RC2000	£27.00
Metrohm	9B	£27.00
Metrohm	16R	£27.00
Other similar		£27.00
LOOP TESTERS		
Martindale	LP2000	£27.00
Metrohm	16L Series	£27.00
Martindale EZ2100/2500		£27.00
Other similar		£27.00
MULTIFUNCTION		
Martindale	VR 2240	£72.00
Martindale	VR 2250	£95.00
Other multi-function		£72.00
Other multi-function with power analysis		£95.00
VOLTAGE TESTERS		
Martindale	VI	£27.00
	TEK 100/200	£27.00
Drummond	Test lamps	£27.00
Other similar below 1000V		£27.00
MULTIMETERS		
Martindale	MM30 series	£27.00
	MM42	£27.00
	MM44	£27.00
	MM45	£27.00
	MM47	£27.00
	MM53	£39.00
	MM84	£39.00
Other	3 ½ digit	£27.00
Other	4 ½ digit	£39.00
CLAMP METERS		
Martindale	CM51	£27.00
	CM54	£27.00
	CM56	£27.00
	CM58	£39.00
	CT60	£27.00
	CM67	£39.00
Other basic		£27.00
Other true RMs		£39.00

EARTH TESTERS	TYPE	PRICE
Metrohm	E1610	£39.00
Other similar		£39.00
THERMOMETERS		
Martindale	DT75	£27.00
	IR90	£55.00
	IR88	£55.00
Other similar conventional		£27.00
Other similar infrared		£55.00
MILLIOHM METERS/ MICRO OHM METERS		
Metrohm	E1620	£55.00
Other similar		£55.00
PAT TESTERS		
Metrohm/	MicroPat+	£55.00
Martindale	EasyPAT1600	£39.00
	EasyPAT2100	£55.00
Other manual (excluding flash)		£39.00
Other manual (including flash)		£55.00
Other downloading		£55.00
HIGH VOLTAGE		
Metrohm	E3640	£72.00
	E3511	£72.00
MICROWAVE LEAKAGE DETECTORS		
Martindale	TEK500	£39.00
Other similar		£39.00
PROCESS CONTROL		
Martindale	TEK300	£39.00
Other basic		£39.00
Other multifunction		£55.00
LIGHT		
Martindale	LM90/LM92	£55.00
Other similar		£55.00
SOUND		
Martindale	SP75	£55.00
Other similar		£55.00
GAS DETECTORS		
Martindale	CO90	£55.00
Other similar		£55.00
ANEMOMETERS		
Martindale	AV90	£55.00
Other similar		£55.00

Test Lamps

The Drummond range of test lamps all offer exceptional build quality and performance. The main body and probe incorporate large finger guards for user safety. Housed in a tough moulded body is a 240V 15W special rough service filament lamp which is shielded by a translucent cover. An HRC fuse is incorporated within the body for electrical protection.

A 1.3m long double insulated EPR/CSP cable connects the main body to the probe. This is oil resistant and flame retardant and is also double insulated with a black outer and white inner to give visual warning of cuts and abrasions. The conductor is very flexible multi-stranded tinned copper with a cross sectional area of 2.5mm.

The high insulation moulded probe handle houses a current limiting resistor and a second HRC fuse (fast acting HRC 500ma 600V) which is accessible via the removable finger guard.

The screw-in probes have insulation to within less than 4mm of the tip. The Drummond range fully complies with GS38.

Drummond lamps are widely specified by electrical utilities and other large, safety conscious organisations.

Test Lamp - MTL7

The classic John Drummond test lamp is fuse protected and complies with GS38. This makes it ideal for low cost voltage testing.

The lamp gives clear positive indication of the presence of voltage and is not sensitive to the presence of phantom voltages.

Also consider the VII3700G on page 41 and the non-contact TEK200 on page 42.

Test lamps should always be proved safe, both before and after use. This can be done by testing on a known live circuit, using the continuity tester, or through the recommended proving unit (PD690).

DRUMTL7	test lamp	£29.00
DRUMTL1000	replacement bulb	£3.05

MTL7

IMPORTANT: Voltage indicators should always be tested with a proving unit or known live source before and after use - see PD690 shown opposite.

Complies with GS38 and G9/6

Double insulated oil resistant and flame retardant cable with black outer and white inner for easy detection of cuts and abrasions.

HRC fuse

MTL9c

IMPORTANT: Voltage indicators should always be tested with a proving unit or known live source before and after use - see PD690 shown below.

Complies with GS38 and G9/6

Double insulated oil resistant and flame retardant cable with black outer and white inner for easy detection of cuts and abrasions.

HRC fuse

Test Lamp - MTL9c

The test lamp incorporates a continuity tester attached to the test lead. This allows rapid convenient proof of the continuity of the test lamp circuit, showing that neither bulb nor fuses have blown. The MTL9c has an LED built into the lamp body, to show voltage presence even when the bulb filament has failed.

Test lamps should always be proved safe, both before and after use. This can be done by testing on a known live circuit, using the continuity tester, or through the recommended proving unit (PD690).

DRUMTL9C	test lamp	£49.00 ◆
DRUMTL1000	replacement bulb	£3.05 ◆
MARTC57	carry case	£17.50

PD690

Output Voltage:
230V into a 5kΩ load
700V into a 700kΩ load

Output Loading: > 4kΩ

Operating Temperature: -10 to 40°C at max. 70% RH

Batteries: 6 x LR6 (MN1500) 1.5V Alkaline batteries or equivalent (excluded)

Dimensions: 143 x 84 x 50mm

Weight: 270g approx (excl batteries)

"Essential safety aid, everyone should use it"

Proving Unit

The proving unit produces 690V AC/DC to enable voltage indicators to be fully checked.

This unit is also designed for indicators with 230V and 415/440V AC or DC detection ranges, such as the Martindale VI13700G.

The is one of the few proving units to check indicators with ranges above 250V. The can also check Drummond and other filament test lamps as its output is sufficient to illuminate the bulb.

Not designed for use with multimeters.

The TC57 carry case can accommodate both the PD690 and a Drummond lamp.

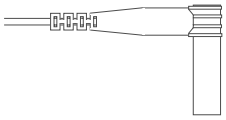
Also works with other manufacturers' voltage testers - see www.mtester.co.uk/prove for details

MARPD690	proving unit	£79.85
TC2A	calibration	£27.00 ◆
MARTC57	carry case	£17.50

Test Leads & Accessories

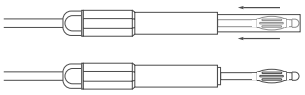
Selecting the Right Leads

C - Right angle fixed shroud



X - IEC lead

D - Sprung retractable shroud



Choose the type of probes and/or croc clips you need. Do you require fused leads for extra safety and GS 38 compliance? Then select the appropriate fittings to connect to your meter.

'C' end fits most modern multimeters including MM series, Fluke 10, 70 & 80 series. Best suited to meters with sockets on the front panel.

'D' end fits many older multimeters and insulation testers.

'E' end fits most modern insulation testers or multimeters with sockets in the top of the unit rather than on the front panel. They can be used in place of 'C'.

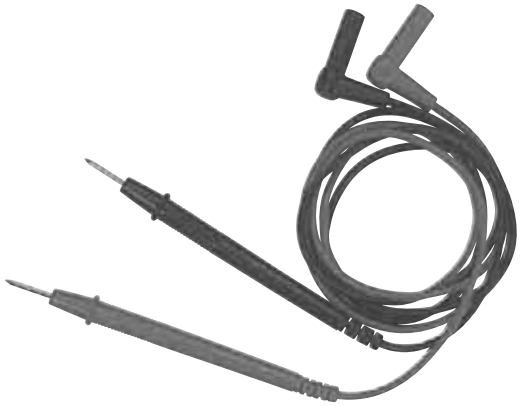
MARTL49	unfused lead set - suitable for tek 402/404	£11.50
MARTL125	computer download lead - PAT tester to PC	£24.95
MARTL211	hot IEC mains lead for loop tester	£10.00

Y - Round Bulgin connector

E - Straight fixed shroud

Z - IEC "Hot" connector

Low Cost Leads TL16

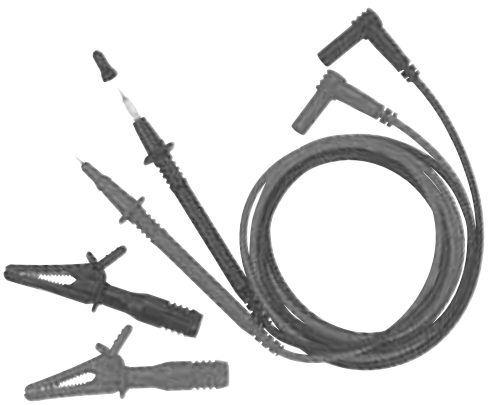


TL16 leads are low cost replacement leads, suitable for most multimeters including the Martindale MM series.

If you require crocodile clips, the TL45 or the TL55 with fuse protection are available.

MARTL16	£7.50

Multimeter Leads TL4X series



The TL4X series are low cost, double insulated PVC leads. For use with hazardous voltages and currents, we recommend the fused 5X series opposite for your extra safety and GS 38 compliance.

TL45: supplied with C right angle fixed shroud.

TL46: supplied with D sprung retractable shroud.

TL47: supplied with E straight fixed shroud.

TL48: supplied with F wide bore right angle fixed shroud.

MARTL45	£19.95
MARTL46	£22.75
MARTL47	£19.95
MARTL48	£22.75

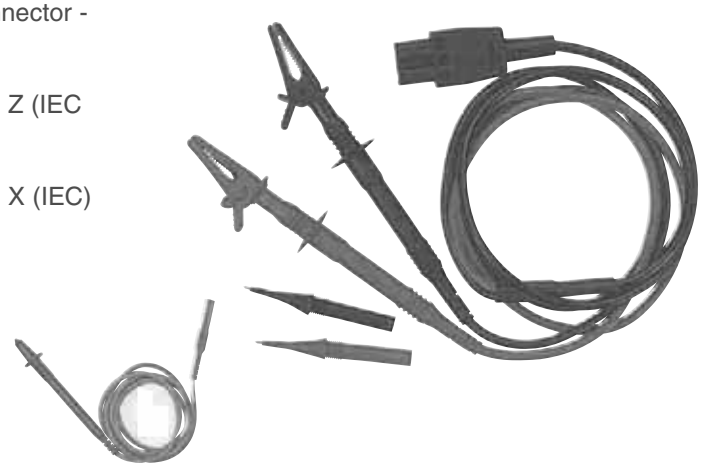
Loop Tester & Fuse Finder Leads

TL83: 2-wire with croc clips supplied with X (IEC) connector - 500mA fused (Martindale fuse finders only).

TL84: 2-wire, two probes with croc clips supplied with Z (IEC "Hot") connector - 10A fused.

TL85: 2-wire, two probes with croc clips supplied with X (IEC) connector - 10A fused.

TL64: Loop tester unfused wander earth probe.



MARTL83	£34.75
MARTL84	£34.75
MARTL85	£34.75
MARTL64	£9.50

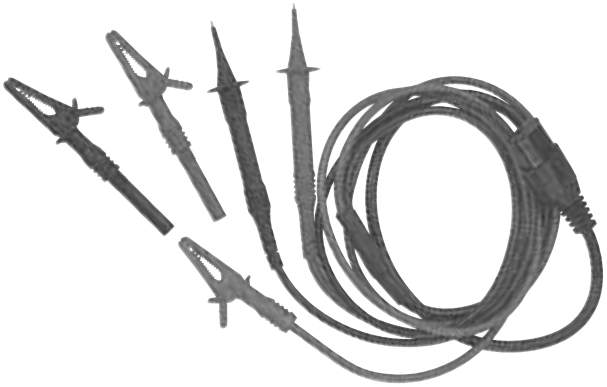
RCD Tester Leads

TL88: 3-wire, two probes with removable croc clips and 1 fixed crocodile clip, supplied with X (IEC) connector - 10A fused.

TL89: As TL88 but supplied with Y (Round Bulgin) connector - 10A fused.

TL205: IEC style (X) Loop/RCD tester mains lead - 13A plug.

TL210: Bulgin style (Y) Loop/RCD tester mains lead - 13A plug.



MARTL88	£34.75
MARTL89	£36.75
MARTL205	£10.00
MARTL210	£14.00

Fused Leads TL5X series

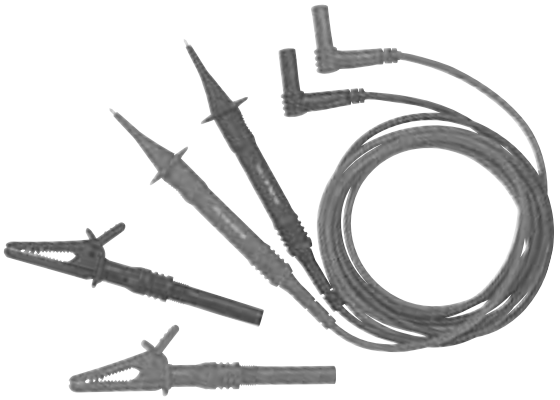
The TL5X series are fused test leads with double insulated silicone cable. Designed for your safety, they comply with GS38 & IEC1010 and include 500mA 500V 50kA rupture rating ceramic fuses.

TL55: supplied with right angle fixed shroud.

TL56: supplied with sprung retractable shroud.

TL57: supplied with straight fixed shroud.

TL58: 3 phase leads as TL55 but in red, yellow and blue.



MARTL55	£32.40
MARTL56	£35.75
MARTL57	£32.40
MARTL58	£42.75

Test Leads & Accessories

Metrohm

DFH0369	flash gun for E3640	£65.00
DFK0075/A	replacement 2m test leads for METE3511	£140.00
DFK0075/C	10m test leads for METE3511	£175.00
DFK0113	test leads for 7A501C	£23.00
PA24249A	carry case for 7A501C	£52.00

loop, RCD and fuse finder leads

TL64	loop tester unfused wander earth probe	£9.50
TL83	2-wire with croc clips supplied with IEC connector - 500mA fused (fuse finder only)	£34.75
TL84	2-wire, 2 probes with croc clips supplied with IEC hot connector-10A fused for loop tester	£34.75
TL85	2-wire, 2 probes with croc clips supplied with connector-10A fused for loop tester	£34.75
TL88	3-wire with croc clips and IEC connector -10A fused for RCD testers & loop testers	£34.75
TL89	as TL88 but supplied with Y (Round Bulgin) connector - 10A fused	£36.75
TL205	IEC style Loop/RCD tester mains lead - 13A plug	£10.00
TL206	13A plug to 3x4mm plug for the Veritest	£16.75
TL210	bulgin style Loop/RCD tester mains lead - 13A plug	£14.00

4mm fused test leads with double insulated silicone cable

TL55	with right angle fixed shroud	£32.40
TL56	with sprung retractable shroud	£35.75
TL57	with straight fixed shroud	£32.40
TL58	3 phase leads as TL55 but in red, yellow and blue	£42.75

cases

TC151	clip on PAT tester accessory bag	£19.50
TC55	multi-meter carry case	£6.75
TC57	multi-purpose carry case see page 13	£17.50
TC64	zip case for Veritest (VR2240 & VR2230)	£29.00
TC66	hard case for VR2230 / 2240	£29.00
TC68	case for PSI3000 + CM50 series clamp meters	£12.95
TC67	case for veritest (VR2250)	£29.00

4mm multimeter leads

TL45	double insulated PVC leads - C right angle fixed shroud	£19.95
TL46	double insulated PVC leads - D sprung retractable shroud	£22.75
TL47	double insulated PVC leads - E straight fixed shroud	£19.95
TL48	double insulated PVC leads - F wide bore right angle fixed shroud	£22.75

three phase adaptor for PATs

TL151	16 amp 4 pin delta style lead	£29.95
TL152	16 amp 5 pin delta style lead	£29.95
TL153	32 amp 4 pin star style lead	£29.95
TL154	32 amp 5 pin star style lead	£29.95

miscellaneous

EX331	optional adaptor lead to test 110V plug to 110V sockets leads	£12.95
EX332	240V 3A IEC lead (230mm long)	£4.90
TL16	unfused leads - low cost, suitable for most multimeters	£6.50
TL49	unfused lead set - suitable for tek 402/404	£13.50
TL54	fused test lead set (red/black/green) for VR2240	£53.90
TL61	loop tester earth wander lead	£24.75
TL64	loop tester earth probe	£9.50
TL66	PAT tester earth bond lead - 3metres	£29.80
TL75	earth tester lead in case	£39.75
TL76	earth tester lead kit	£85.00
TL77	30M green r2 continuity lead	£54.75
TL125	computer download lead - PAT tester to PC	£24.95
TL125/adapt	3 to 25 way adapter	£24.95
TL135	serial printer lead - PAT tester to R5232 printer	£24.95
TL150	adaptor lead 110/240 PAT tester	£16.50
TL205	IEC style Loop/RCD tester mains lead - 13A plug	£10.00
TL206	13A plug to 3x4mm plug for the Veritest	£16.75
TL211	hot IEC mains lead for loop tester	£10.00
PATUSBADAPT	for PCs with no serial port, uses USB port	£34.50
VRTL1	infrared data lead for VR2240	£38.50
VRSOFT1	downloading software for VR2240	£79.00

Just look at our range

- **calibration**

To ensure your equipment remains in specification throughout its life Martindale offers a calibration service on all the equipment in this catalogue.

- **repair**

In the unlikely event of your tester failing Martindale offers a full repair service to restore your instrument to its original specification.

- **training**

We currently provide PAT training, at our premises or yours.

- **lifetime telephone technical support**

If you only use your test equipment occasionally or if you have any queries, please check out our website for updated manuals and application notes. If that doesn't solve your problem please call us on 01923 441717.

just look at our range

- 16th Edition testers
- All-in-one's
- Calibration equipment
- Continuity testers
- Electrician's kits
- Full calibration & repair service
- Fuse finders
- Digital clamp meters
- Digital multimeters
- Microwave leakage detectors
- Non-trip loop testers
- Pat testers & accessories
- Phase rotation
- Proving units
- Socket testers
- Thermometers & probes
- Test leads
- Voltage indicators
- Specialist Metrohm testers (4 & 5kV)
- Specialist Drummond testers

www.martindale-electric.co.uk

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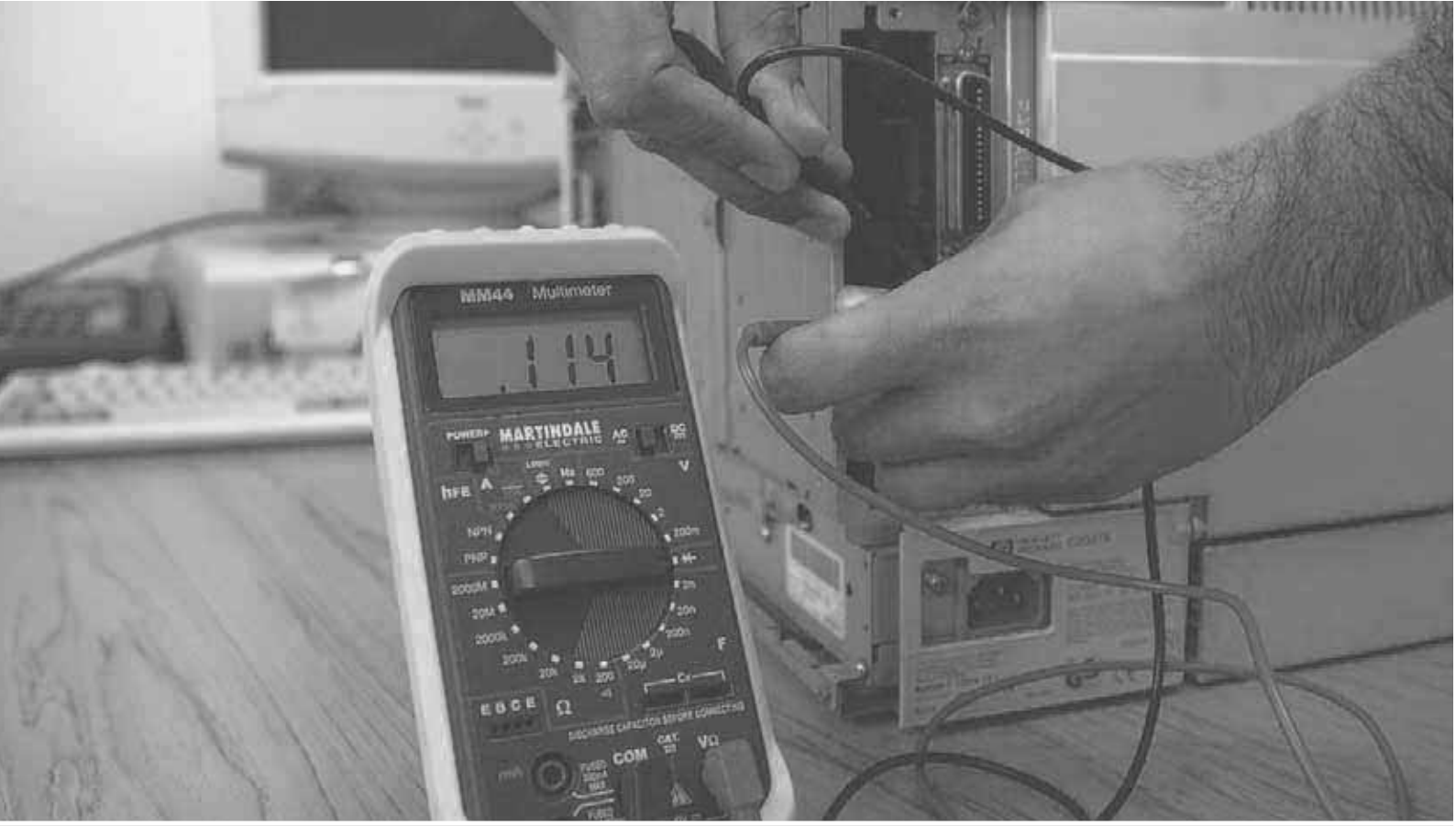

- 16th Edition testers
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- Non-trip loop testers
- Pat testers & accessories
- Phase rotation
- Proving units
- Socket testers
- Thermometers & probes
- Test leads
- Voltage indicators
- Specialist Metrohm testers (4 & 5kV)
- Specialist Drummond testers

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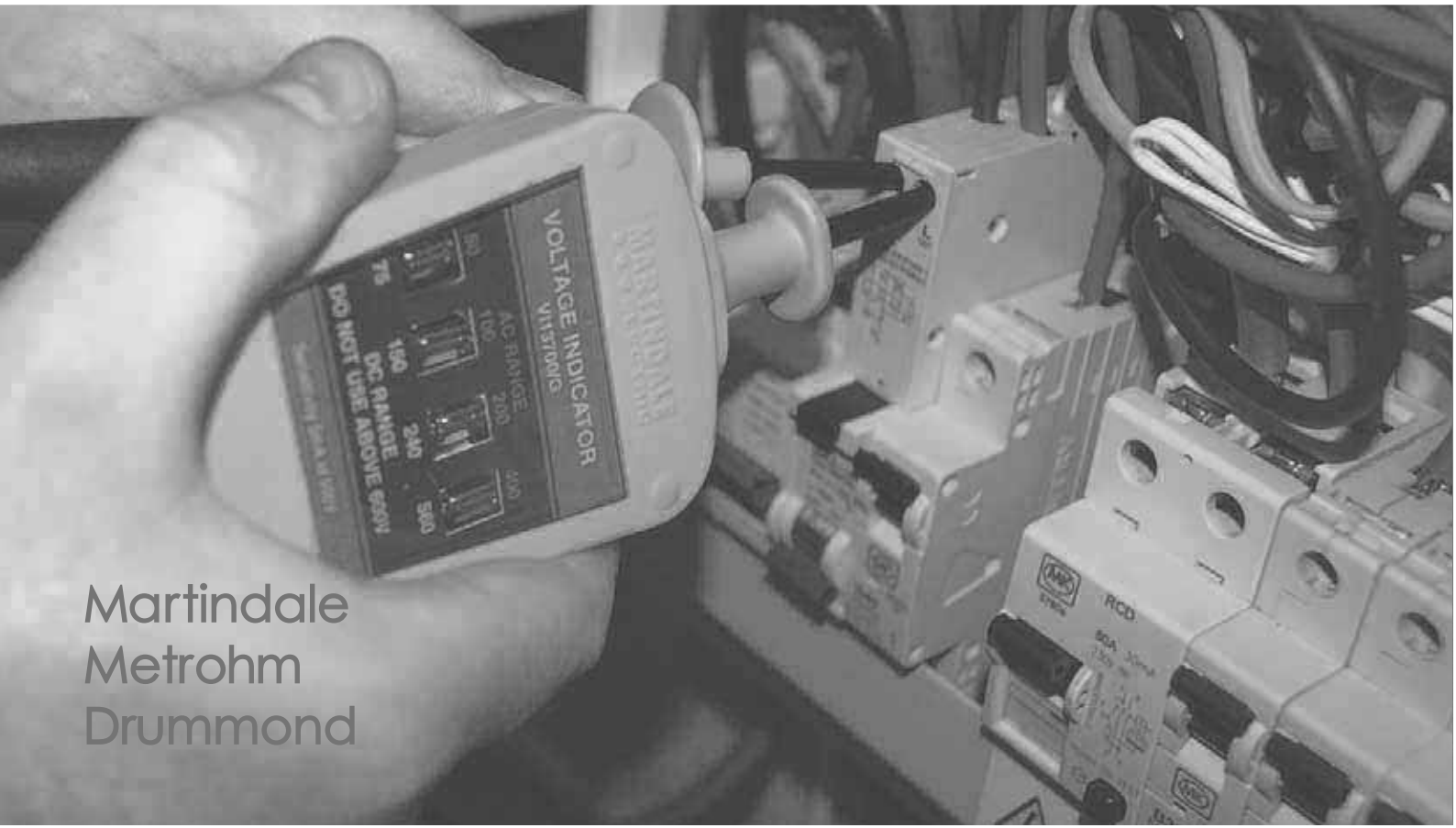

Martindale
Metrohm
Drummond